Step-by-Step Guide

to

Open-E DSS V7 Active-Passive iSCSI Failover

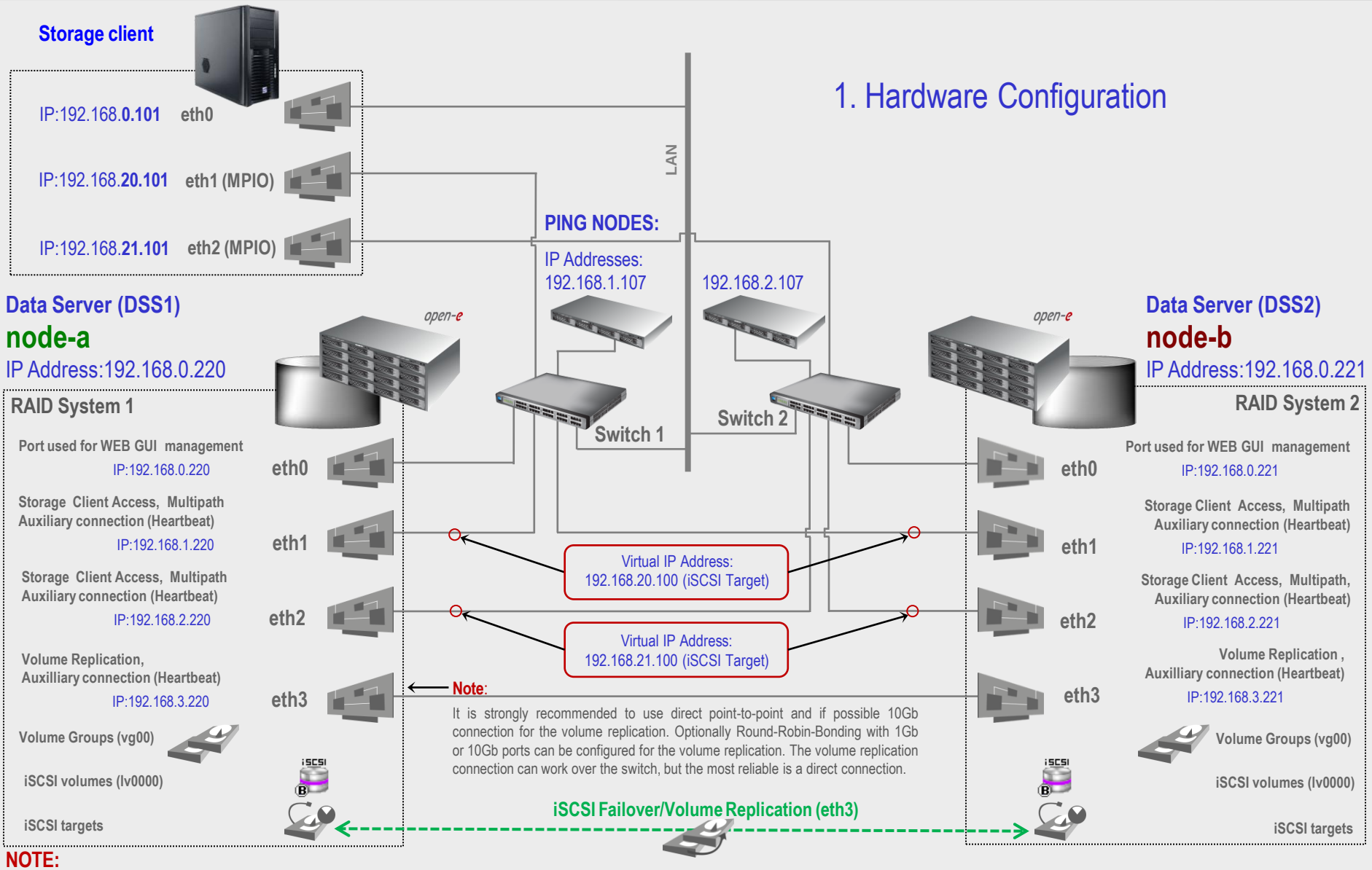
Software Version: DSS ver. 7.00 up02

Presentation updated: November 2012

To set up Active-Passive iSCSI Failover, perform the following steps:

1. Hardware configuration:
2. Network Configuration
   - Set server hostnames and ethernet ports on both nodes (node-a, node-b)
3. Configure the node-b:
   - Create a Volume Group, iSCSI Volume
   - Configure Volume Replication mode (destination and source mode) – define remote mode of binding , create Volume Replication task and start the replication task
4. Configure the node-a
   - Create a Volume Group, iSCSI Volume
   - Configure Volume Replication mode (source and destination mode), create Volume Replication task and start the replication task.
5. Create targets (node-a and node-b)
6. Configure Failover (node-a and node-b)
7. Start Failover Service
8. Test Failover Function
9. Run Failback Function

Open-E DSS V7 Active-Passive iSCSI Failover



NOTE:

For additional layer of redundancy, you may add an extra connection between switches and ping nodes.

Open-E DSS V7 Active-Passive iSCSI Failover

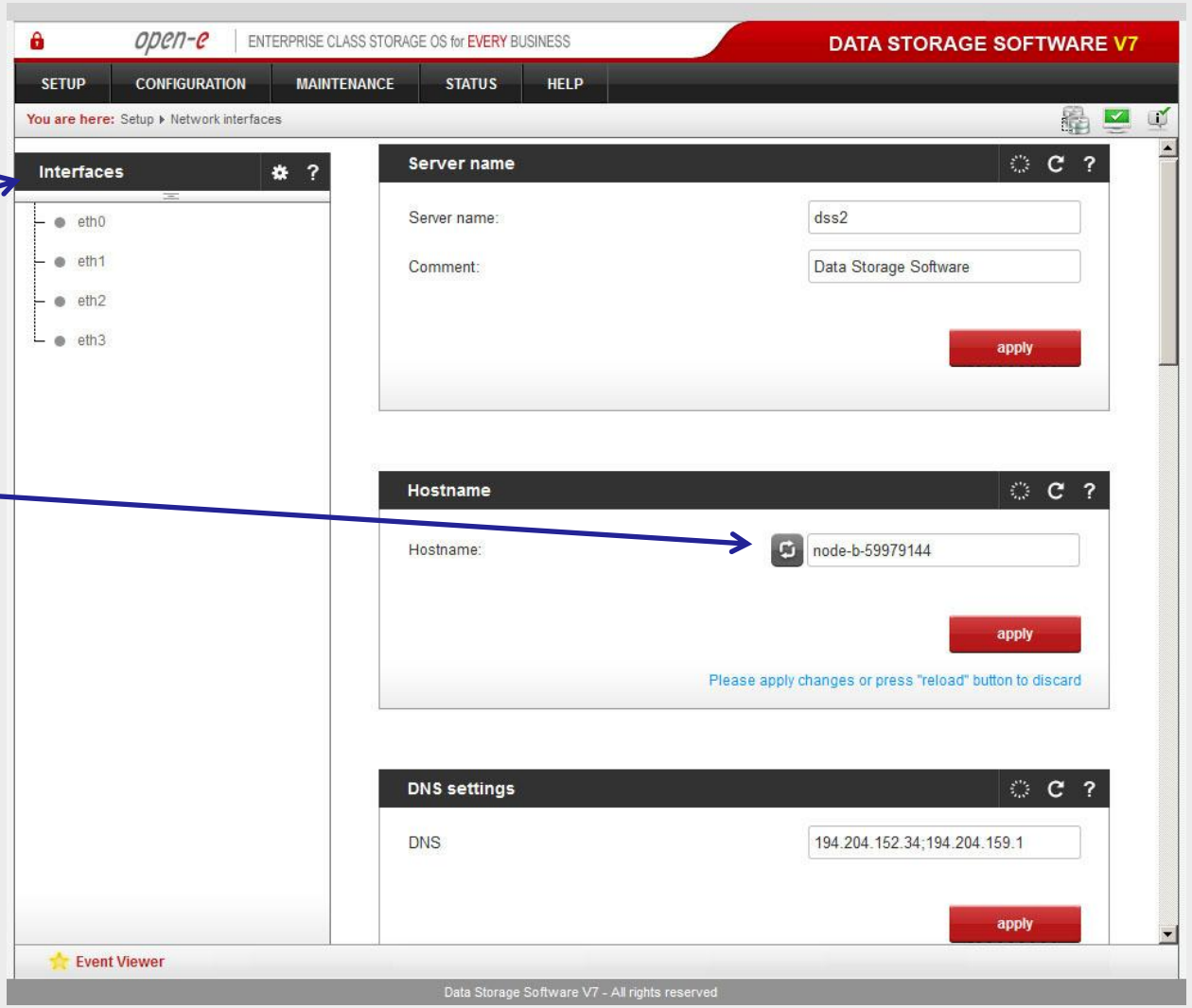
Data Server (DSS2)

node-b

IP Address:192.168.0.221

1. Hardware Configuration

After logging on to the Open-E DSS V7 (node-b), please go to **SETUP** and choose the **„Network interfaces"** option.
In the **Hostname** box, replace the "dss" letters in front of the numbers with „node-b" server, in this example **„node-b-59979144"** and click the apply button (this will require a reboot).



Open-E DSS V7 Active-Passive iSCSI Failover

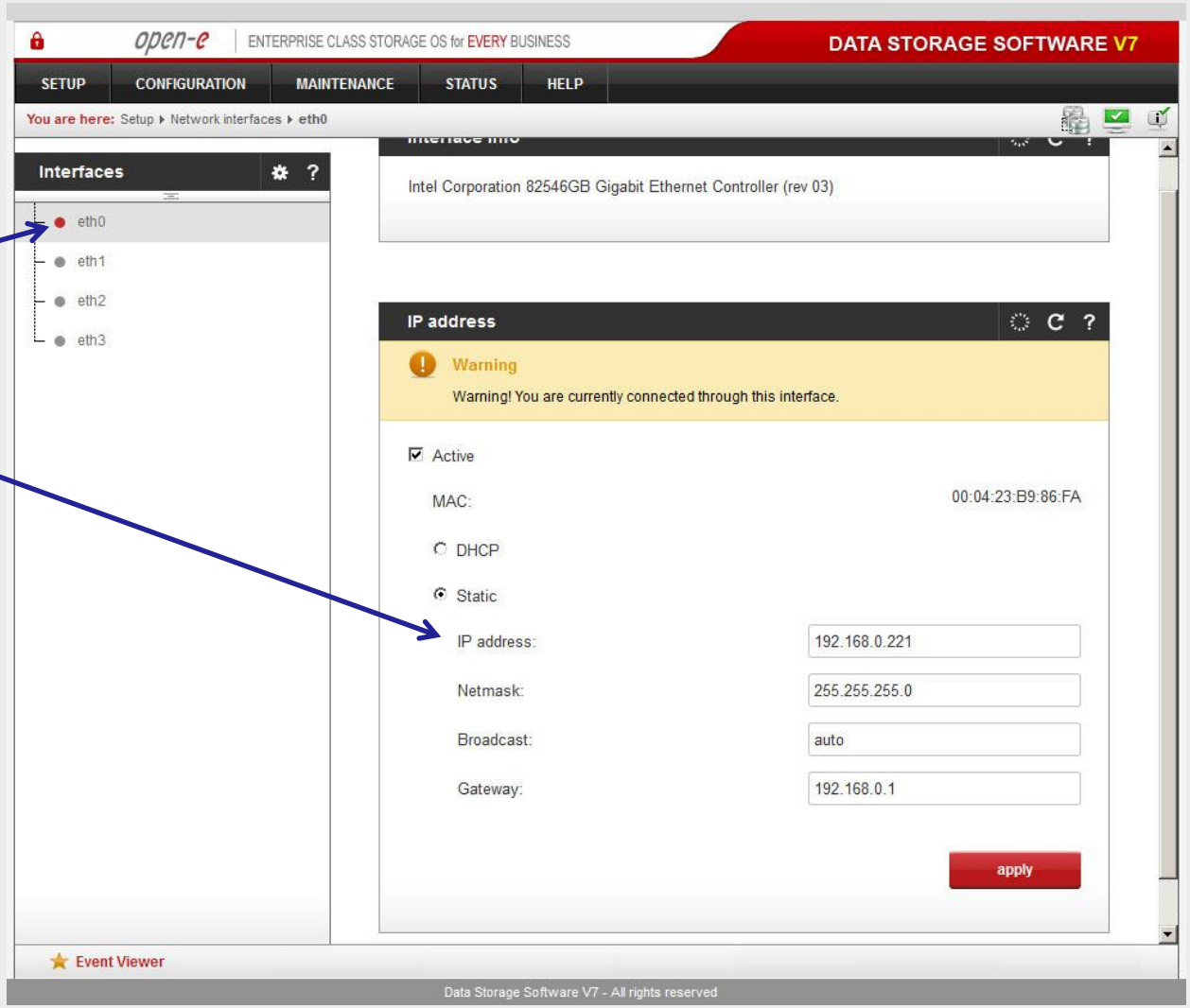
Data Server (DSS2)

node-b

IP Address:192.168.0.221

1. Hardware Configuration

Next, select **eth0** interface and in the **IP address field,** change the IP address from 192.168.0.220 to 192.168.0.221
Then click **apply** (this will restart network configuration).



Open-E DSS V7 Active-Passive iSCSI Failover

Data Server (DSS2)

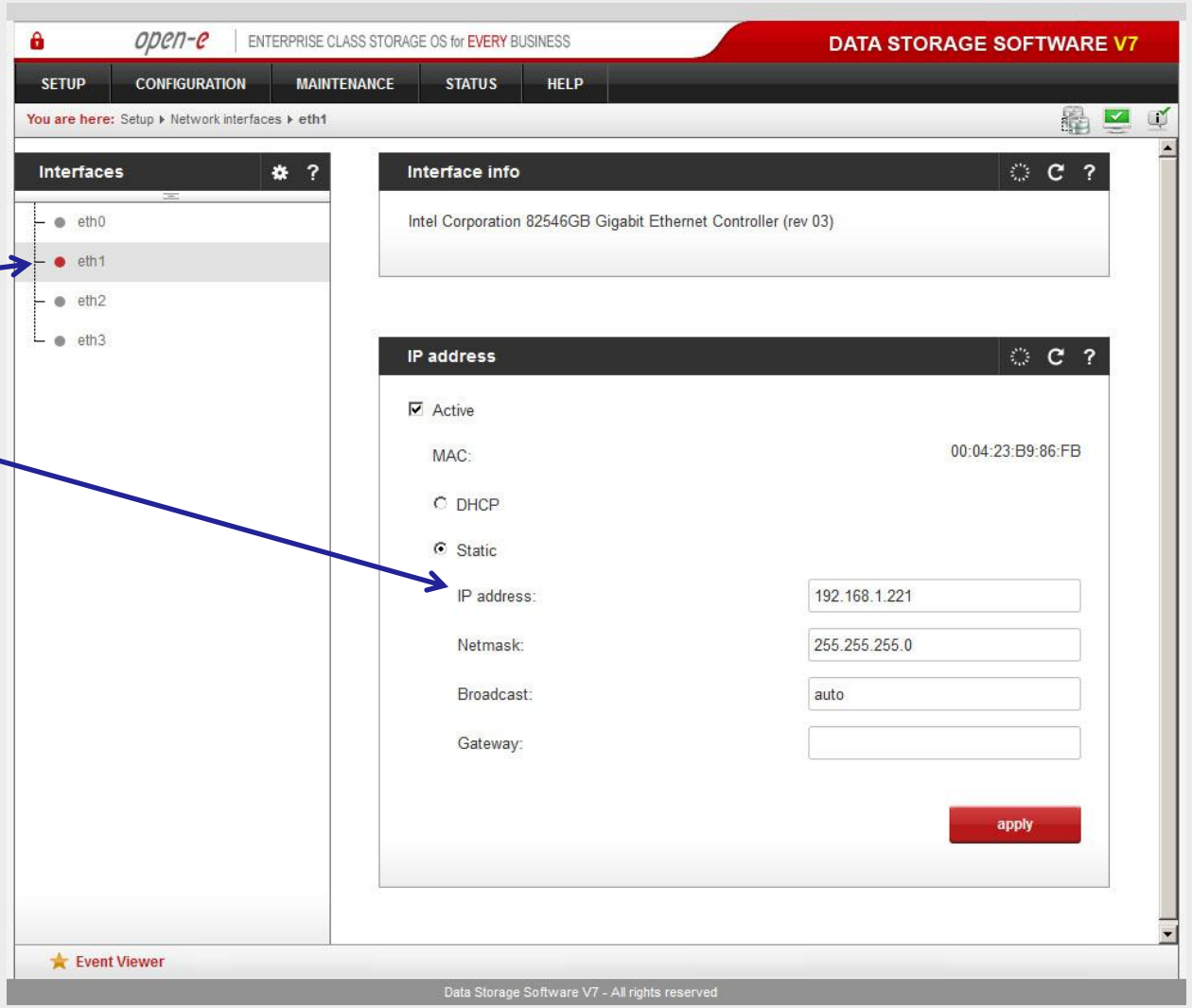
node-b

IP Address:192.168.0.221

1. Hardware Configuration

Afterwards, select **eth1** interface and change the IP address from 192.168.1.220 to 192.168.1.221 in the field **IP address** and click the apply button.

Next, change the IP addresses in **eth2** and **eth3** interfaces accordingly.



Open-E DSS V7 Active-Passive iSCSI Failover

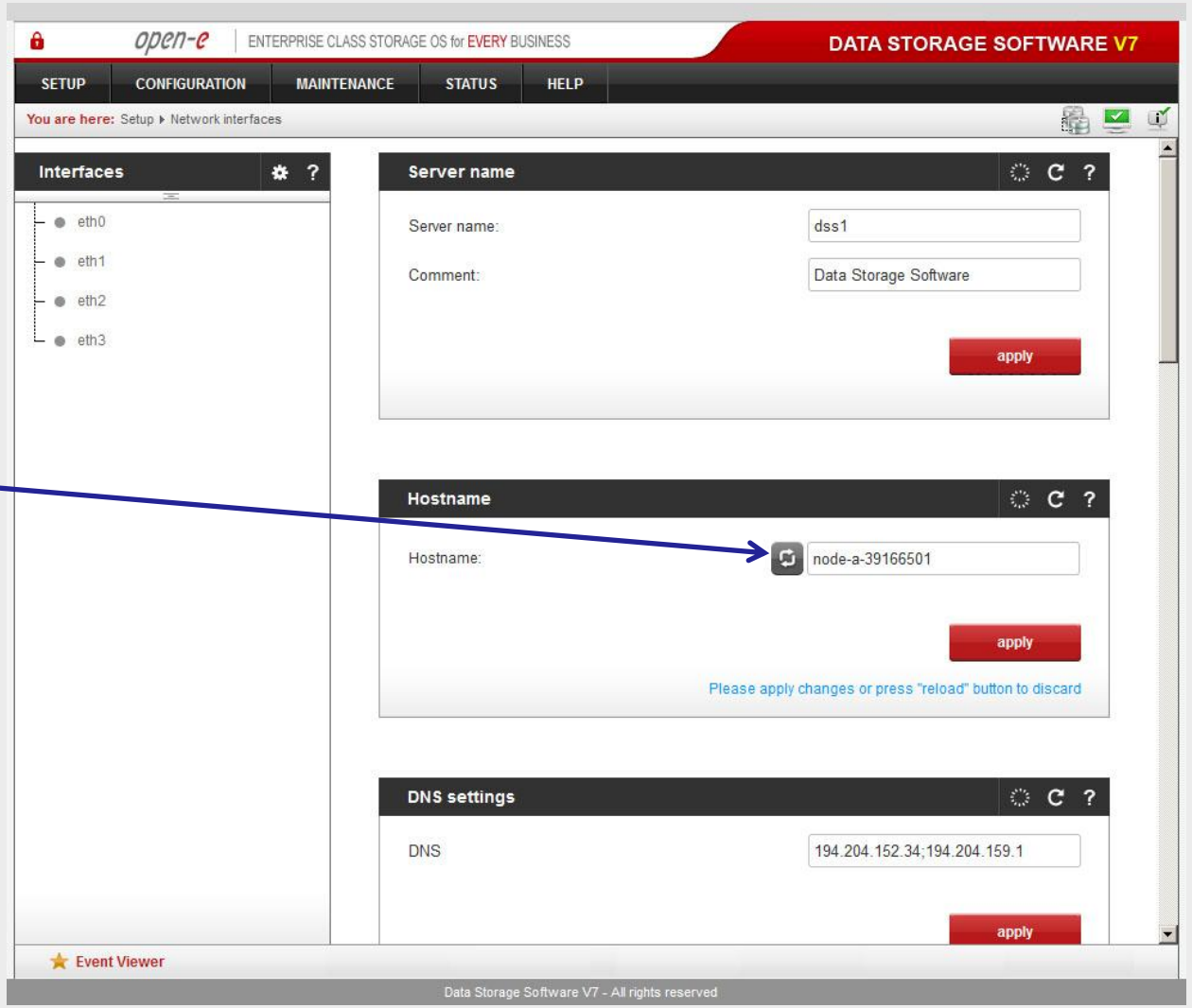
Data Server (DSS1)

node-a

IP Address:192.168.0.220

1. Hardware Configuration

After logging in to node-a, please go to **SETUP** and choose the **„Network interfaces**" option. In the **Hostname** box, replace the "dss" letters in front of the numbers with „node-a" server, in this example **„node-a-39166501"**and click **apply** (this will require a reboot).



Open-E DSS V7 Active-Passive iSCSI Failover

Data Server (DSS2)

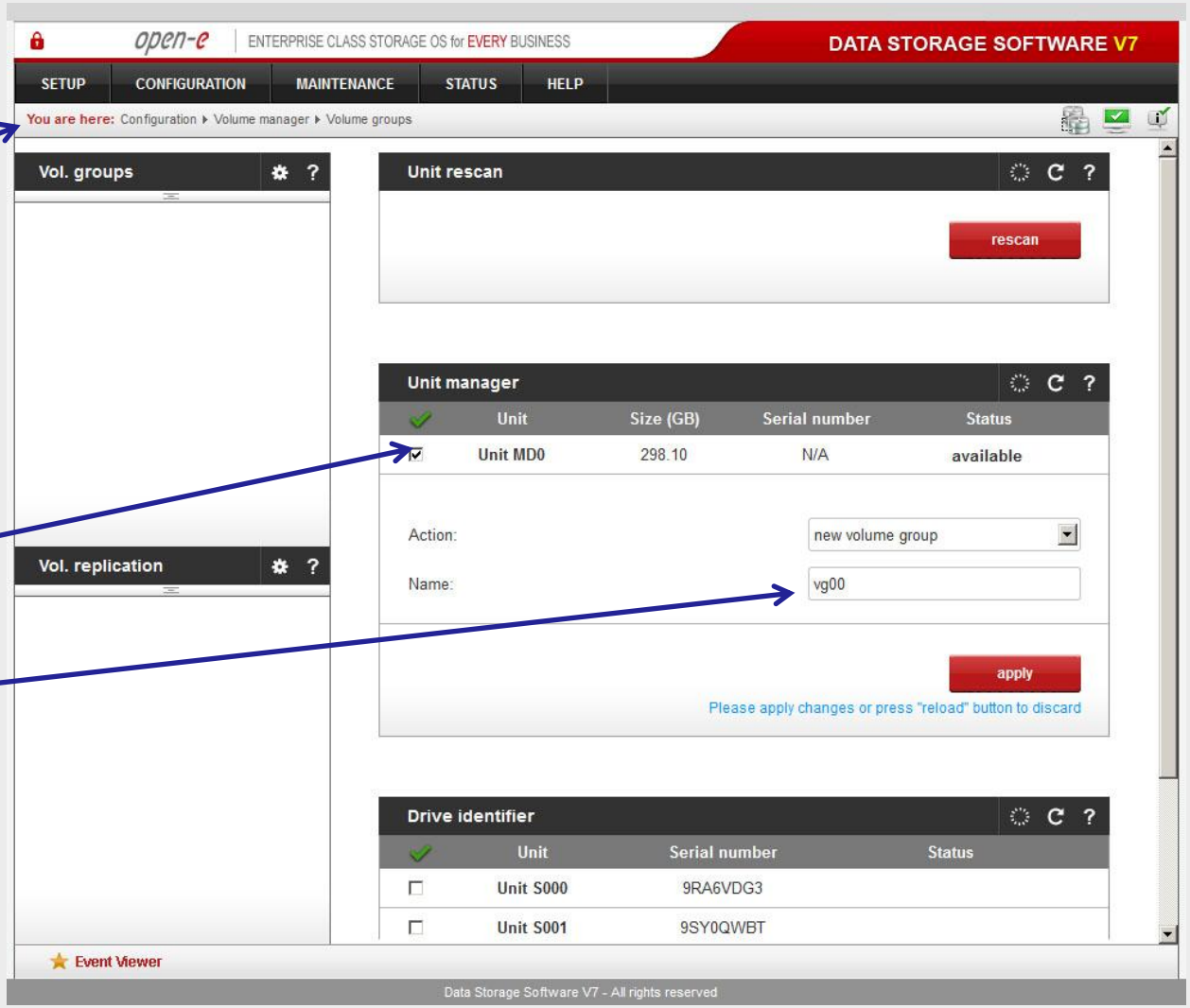
node-b

IP Address:192.168.0.221

2. Configure the node-b

Under **CONFIGURATION**, select **„Volume manager", then** click on **„Volume groups".**

In the **Unit manager** function menu, add the selected physical units (**Unit MD0** or other) to create a new volume group (in this case, **vg00**) and click the **apply** button.



Open-E DSS V7 Active-Passive iSCSI Failover

Data Server (DSS2)

node-b

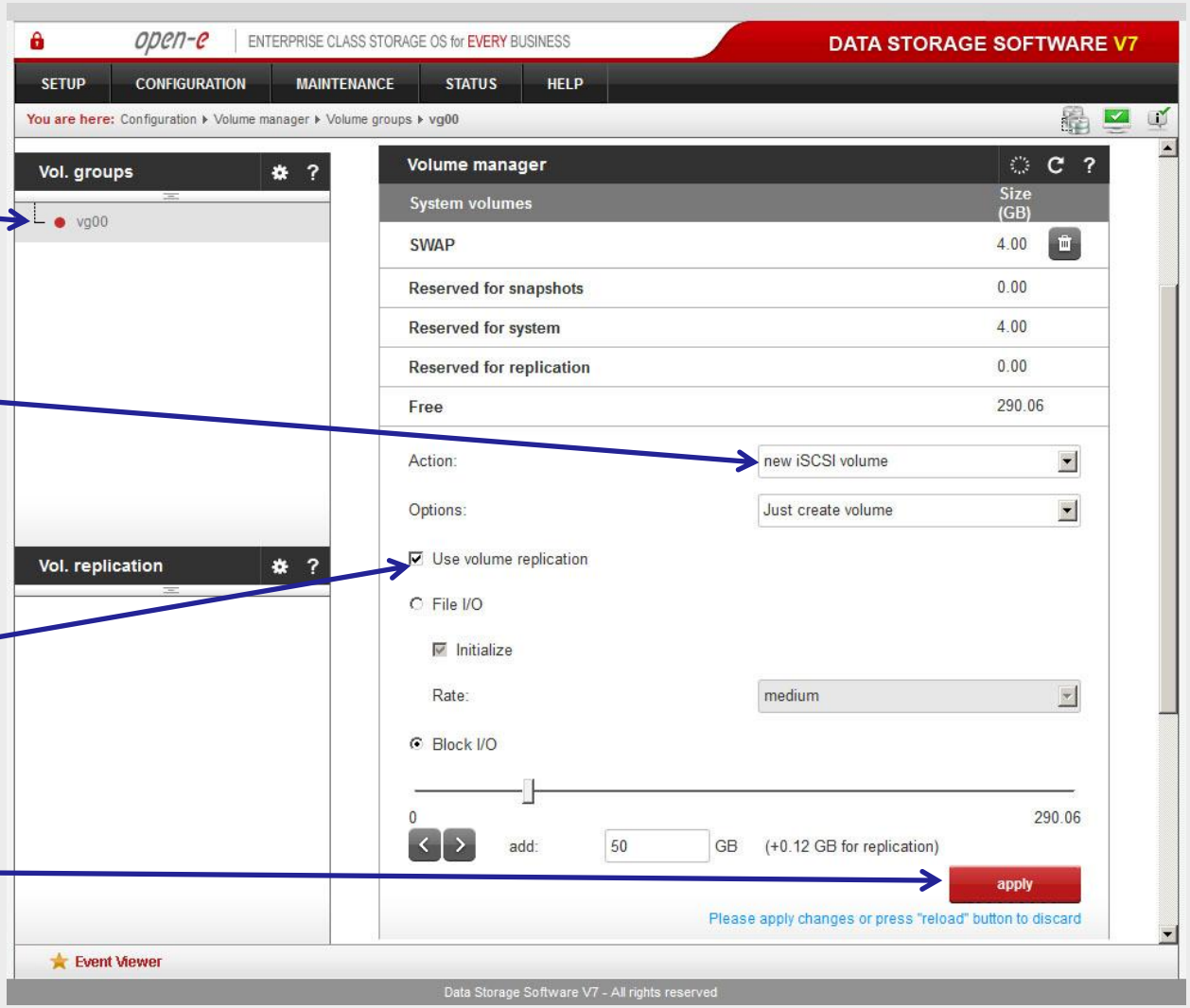
IP Address:192.168.0.221

2. Configure the node-b

Select the appropriate volume group (**vg00**) from the list on the left and create a **new iSCSI volume** of the required size. The logical volume (**lv0000**) will be the destination of the replication process on node-b.

Next, check the box **Use volume replication.**

After assigning an appropriate amount of space for the iSCSI volume, click the apply button.



Open-E DSS V7 Active-Passive iSCSI Failover

Data Server (DSS2)

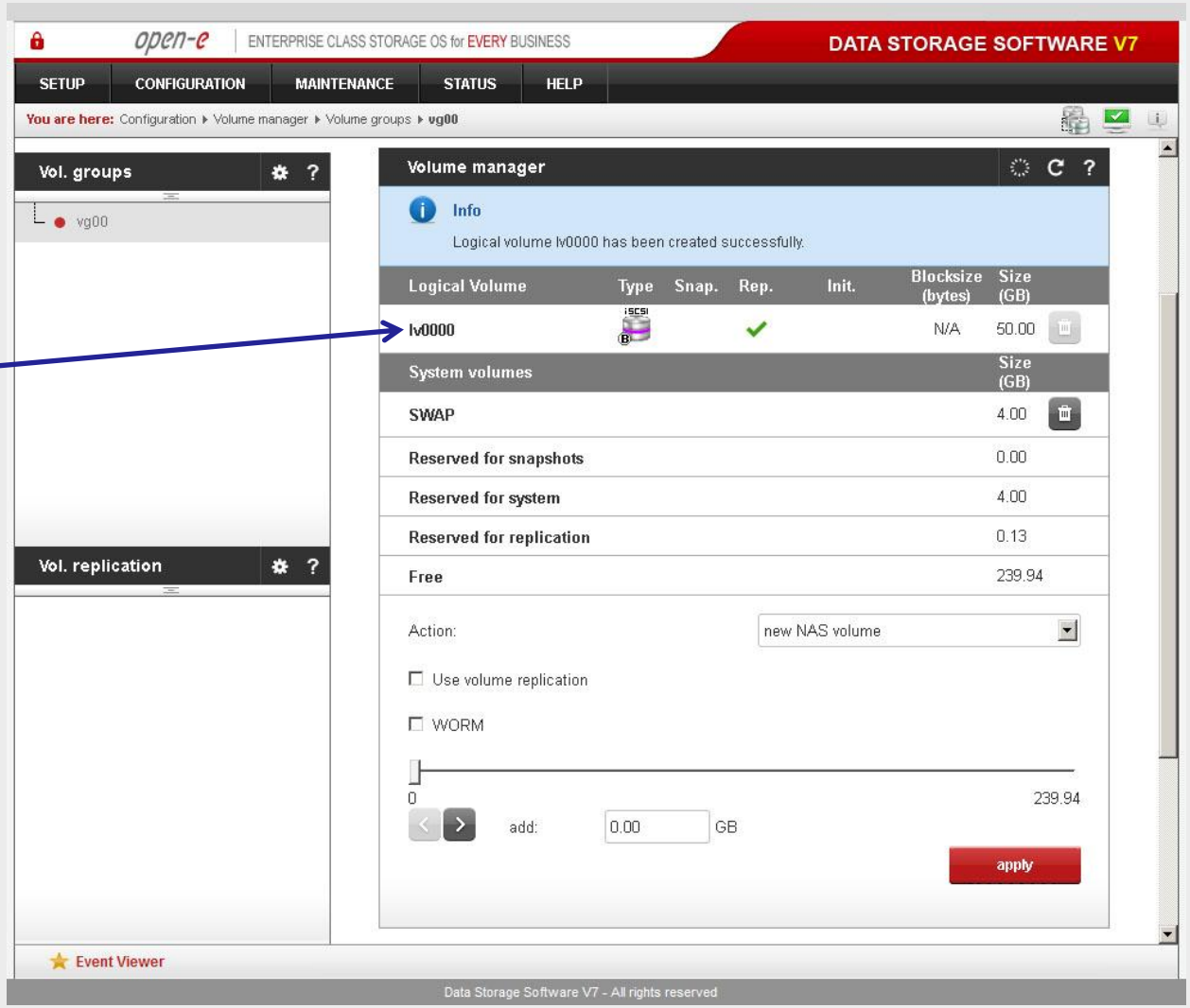
node-b

IP Address:192.168.0.221

2. Configure the node-b

Logical iSCSI Volume Block I/O is now configured.

iSCSI volume (lv0000)



Open-E DSS V7 Active-Passive iSCSI Failover

Data Server (DSS1)

node-a

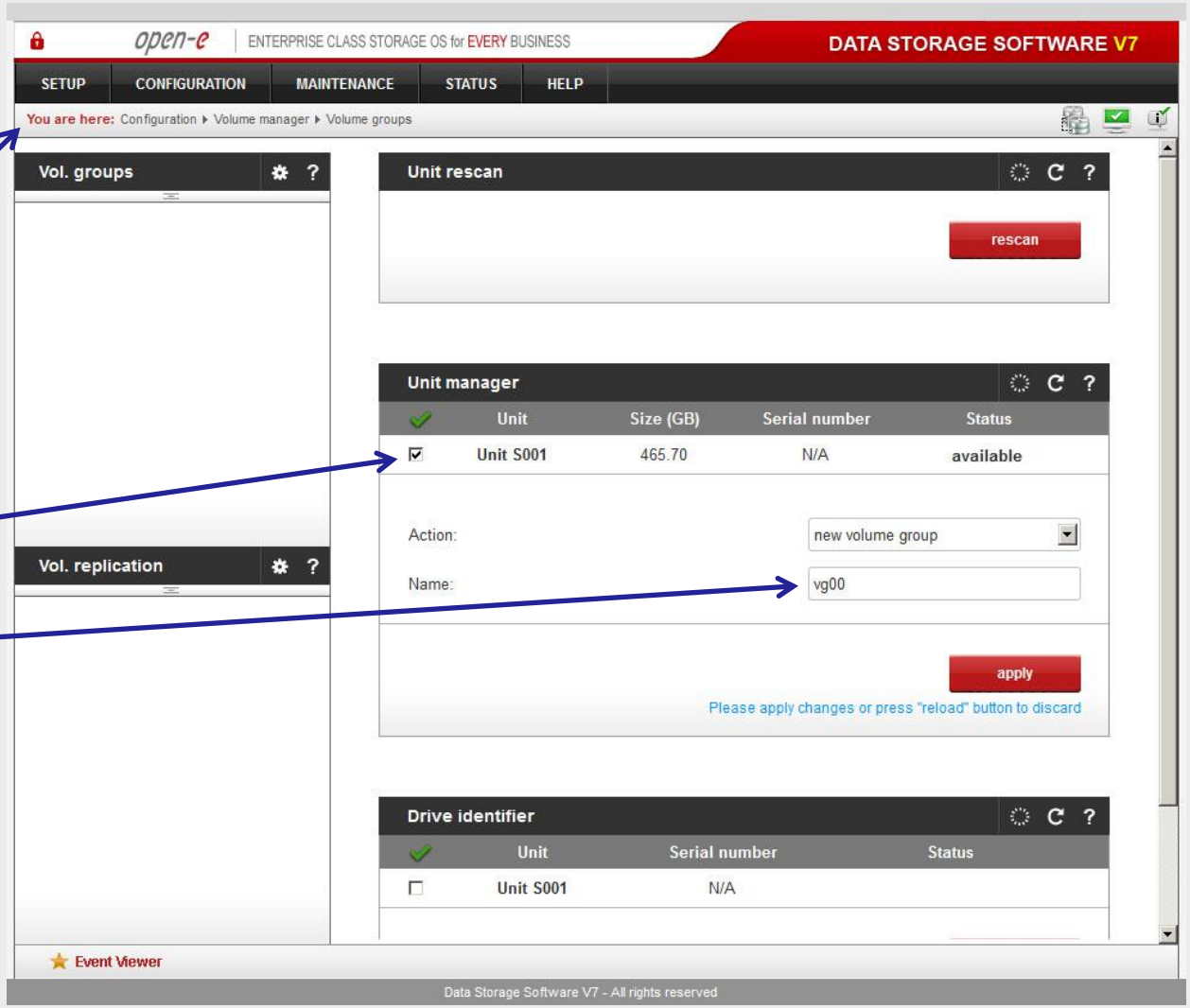
IP Address:192.168.0.220

3. Configure the node-a

Next, go to the node-a system. Under **CONFIGURATION**, select **„Volume manager"** and then click on **„Volume groups".**

Add the selected physical units (**Unit S001** or other) to create a new volume group (in this case, **vg00**) and click apply button.

Volume Groups (vg00)



Open-E DSS V7 Active-Passive iSCSI Failover

Data Server (DSS1)

node-a

IP Address:192.168.0.220

3. Configure the node-a

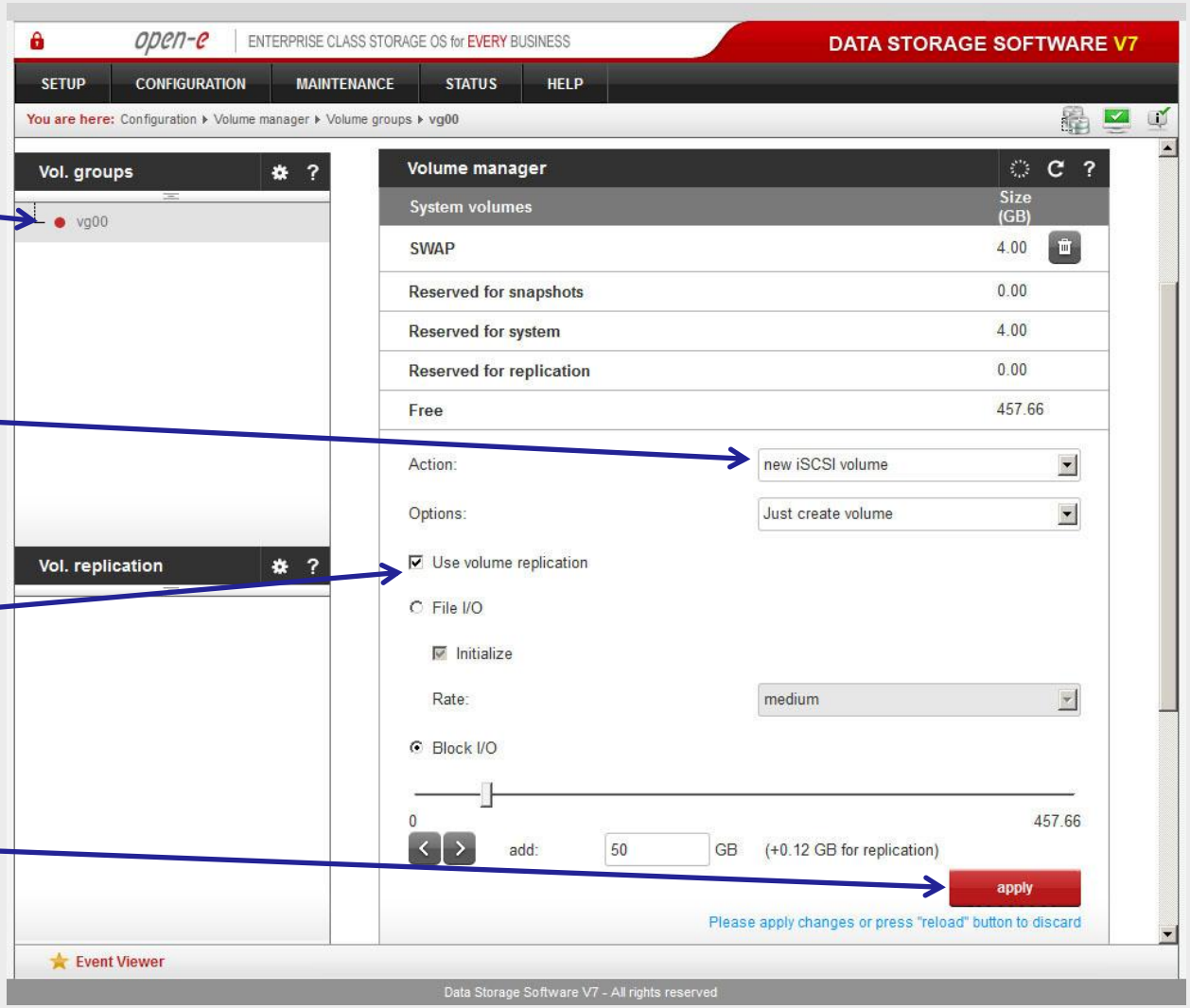
Select the appropriate volume group (**vg00**) from the list on the left and create a **new iSCSI volume** of the required size. The logical volume (**lv0000**) will be a source of the replication process on the node-a.

Next , check the box for „**Use volume replication**”

After assigning an appropriate amount of space for the iSCSI volume, click the apply button

NOTE:

The source and destination volumes must be of identical size.



Open-E DSS V7 Active-Passive iSCSI Failover

Data Server (DSS1)

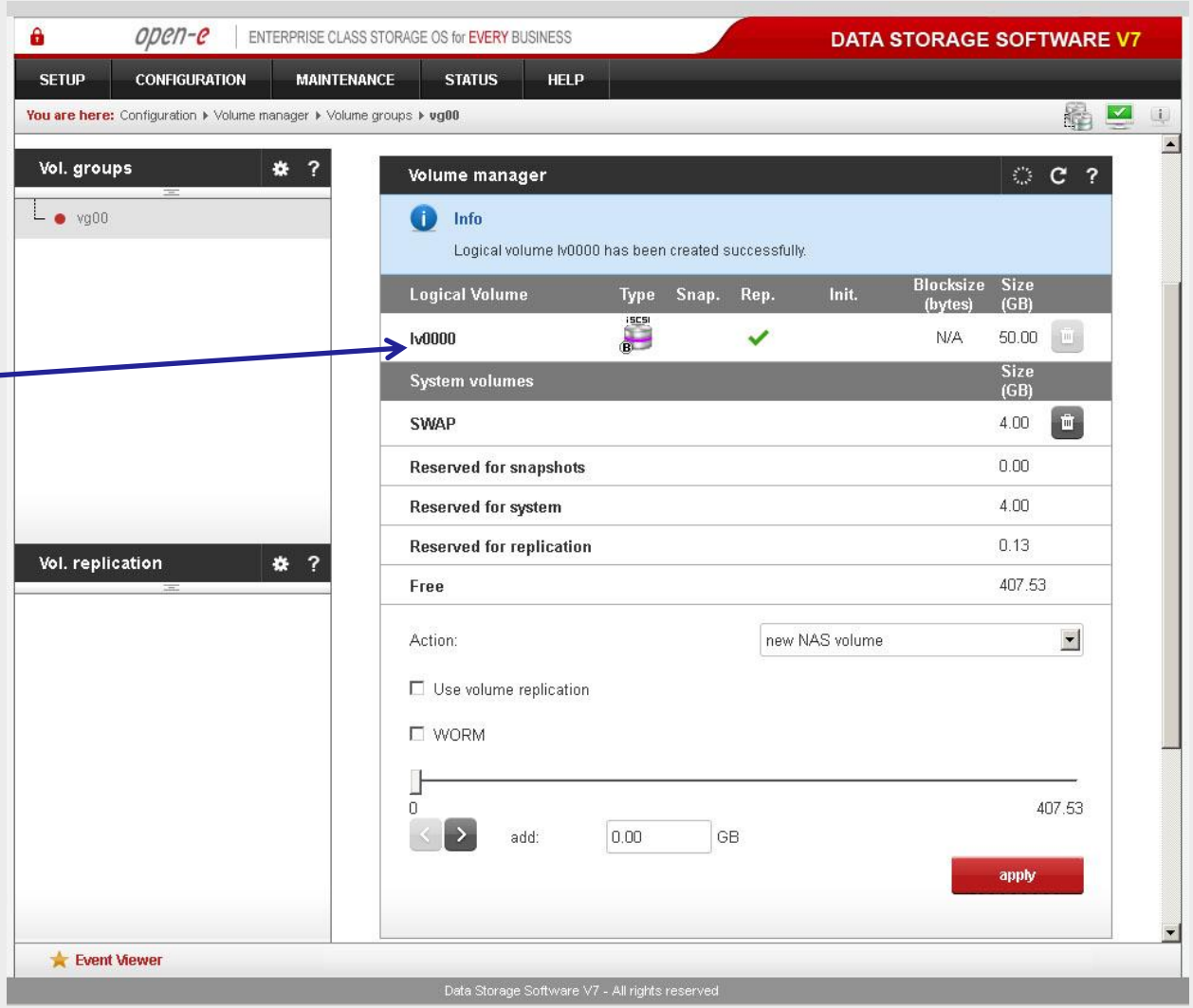
node-a

IP Address:192.168.0.220

3. Configure the node-a

Logical iSCSI Volume Block I/O is now configured.

iSCSI volume (lv0000)



Open-E DSS V7 Active-Passive iSCSI Failover

Data Server (DSS2)

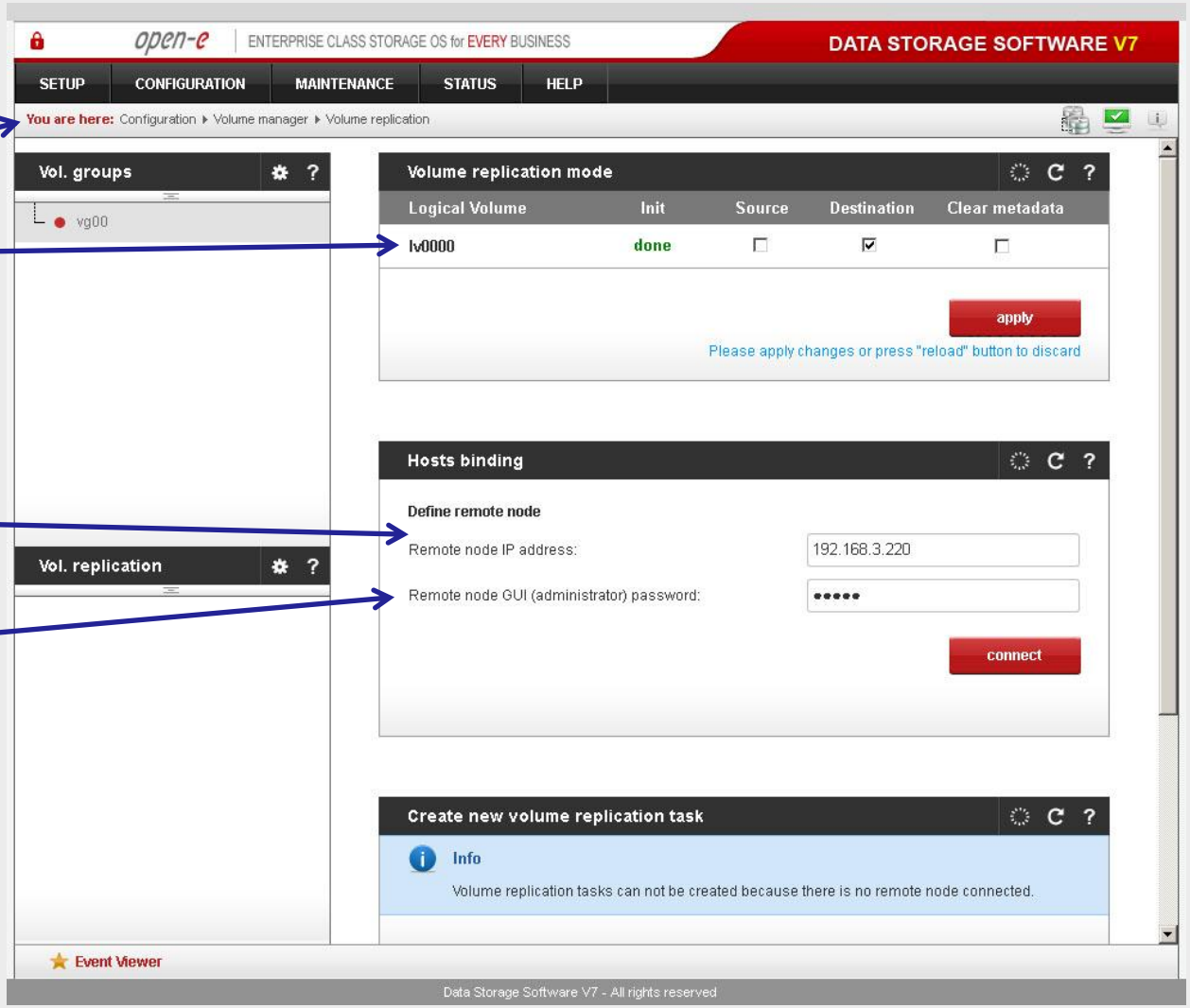
node-b

IP Address:192.168.0.221

2. Configure the node-b

Now, on the node-b, go to „**Volume replication**”.
Within **Volume replication mode** function, check the **Destination** box for **lv0000**.
Then, click the apply button.

In the **Hosts binding** function, enter the IP address of node-a (in our example, this would be 192.168.3.220), enter node-a administrator password and click the apply button.
After applying all the changes, the status should be: *Reachable.*



NOTE:

The Mirror server IP Address must be on the same subnet in order for the replication to communicate. VPN connections can work providing you are not using a NAT. Please follow example:

- Source: 192.168.3.220
- Destination: 192.168.3.221

Open-E DSS V7 Active-Passive iSCSI Failover

Data Server (DSS1)

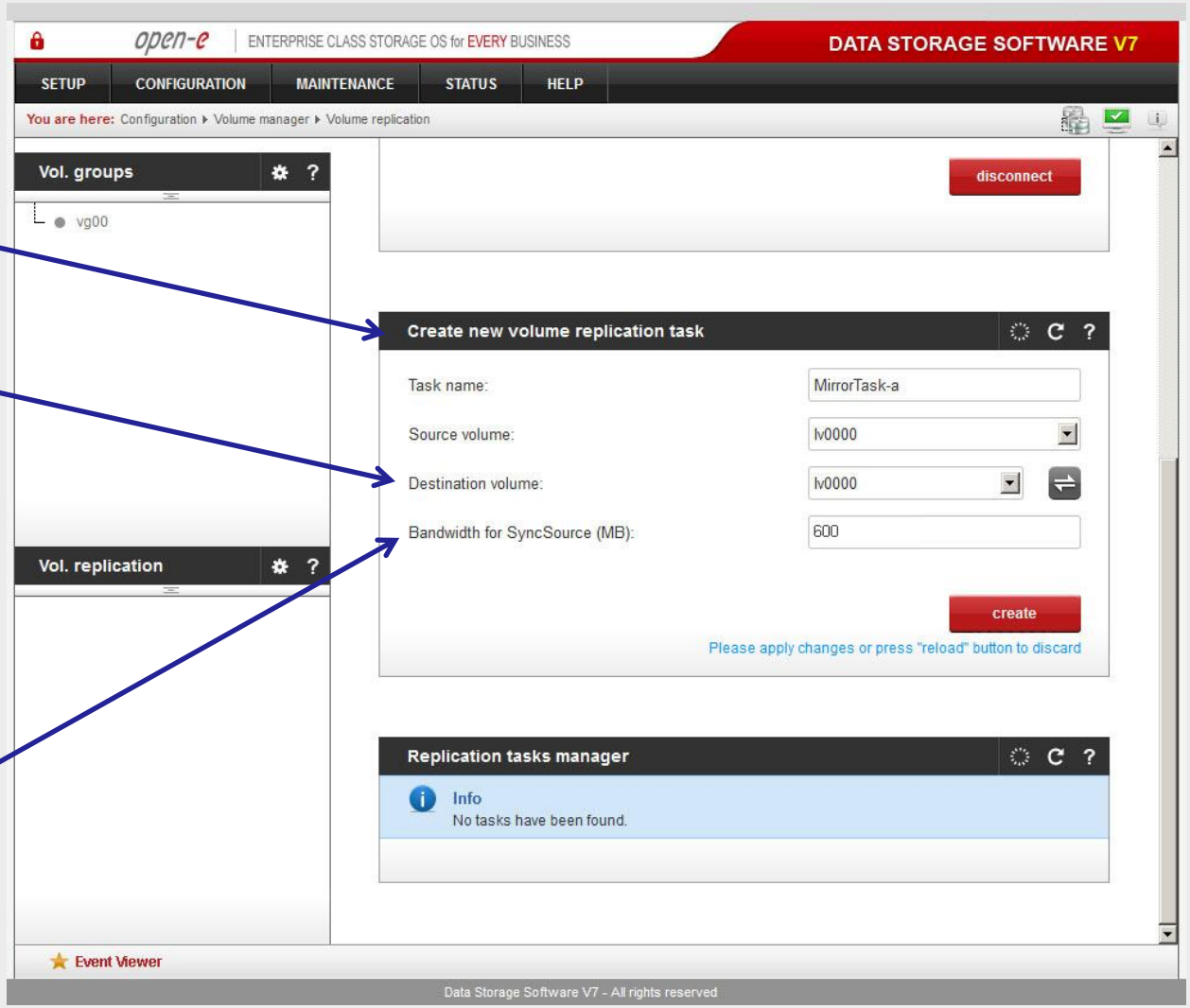
node-a

IP Address:192.168.0.220

3. Configure the node-a

In the **Create new volume replication task**, enter the task name in the **Task name** field, then click on the ⇌ button.
In the **Destination volume** field, select the appropriate volume (in this example, **lv0000**).

In case of a 10GbE connection it is recommended to set for the replication a higher **Bandwidth for SyncSource (MB)**. To achieve better performance you can set 500MB. In the example, maximum 600MB is used. Next, click the **create** button.



Open-E DSS V7 Active-Passive iSCSI Failover

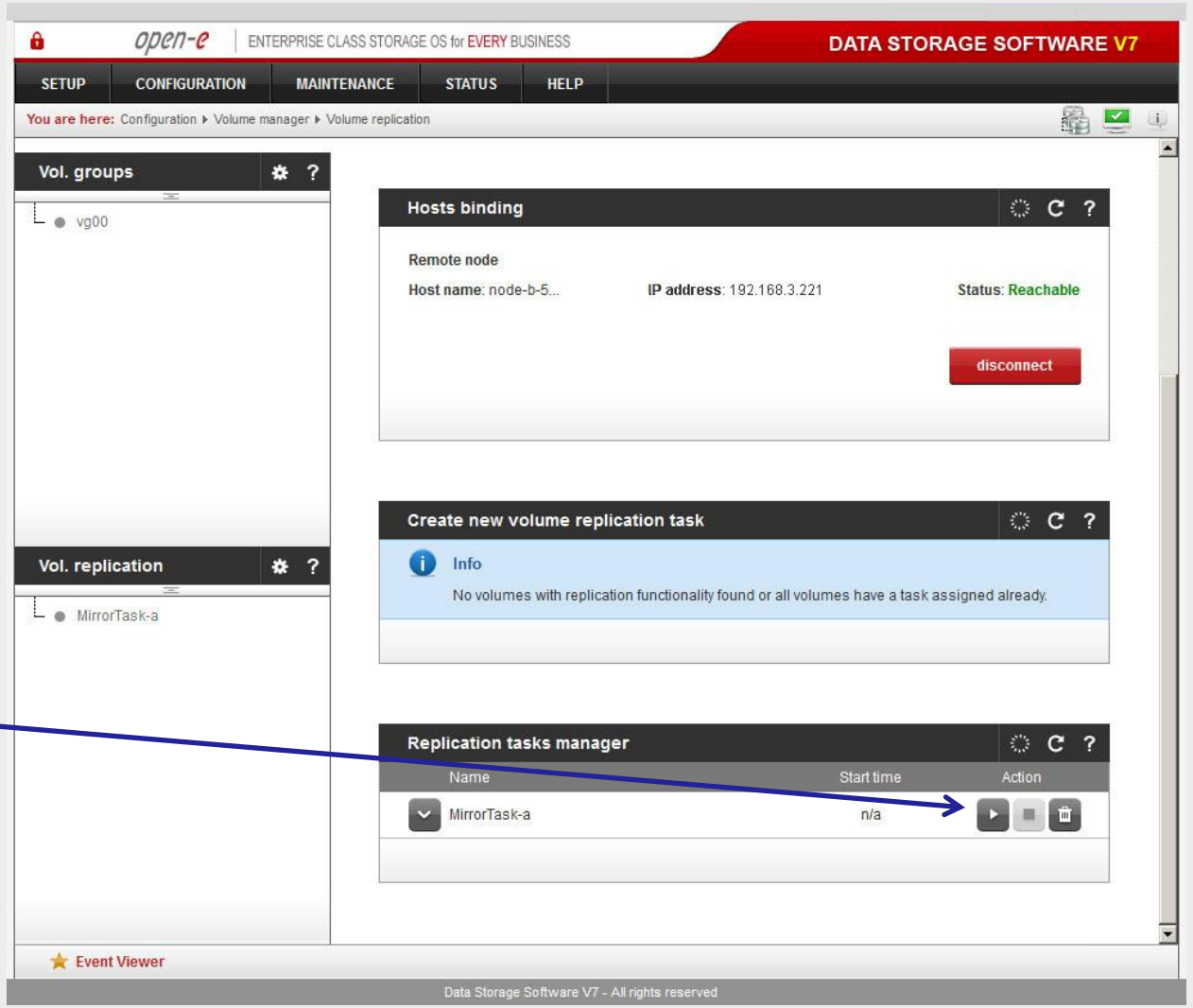
Data Server (DSS1)

node-a

IP Address:192.168.0.220

3. Configure the node-a

Now, in the **Replication task manager** function, click the corresponding „play" button to start the Replication task on the node-a.



Open-E DSS V7 Active-Passive iSCSI Failover

Data Server (DSS1)

node-a

IP Address:192.168.0.220

3. Configure the node-a

In the **Replication tasks manager** function, information is available on currently running replication tasks. When a task is started, a date and time will appear.

Open-E DSS V7 Active-Passive iSCSI Failover

Data Server (DSS1)

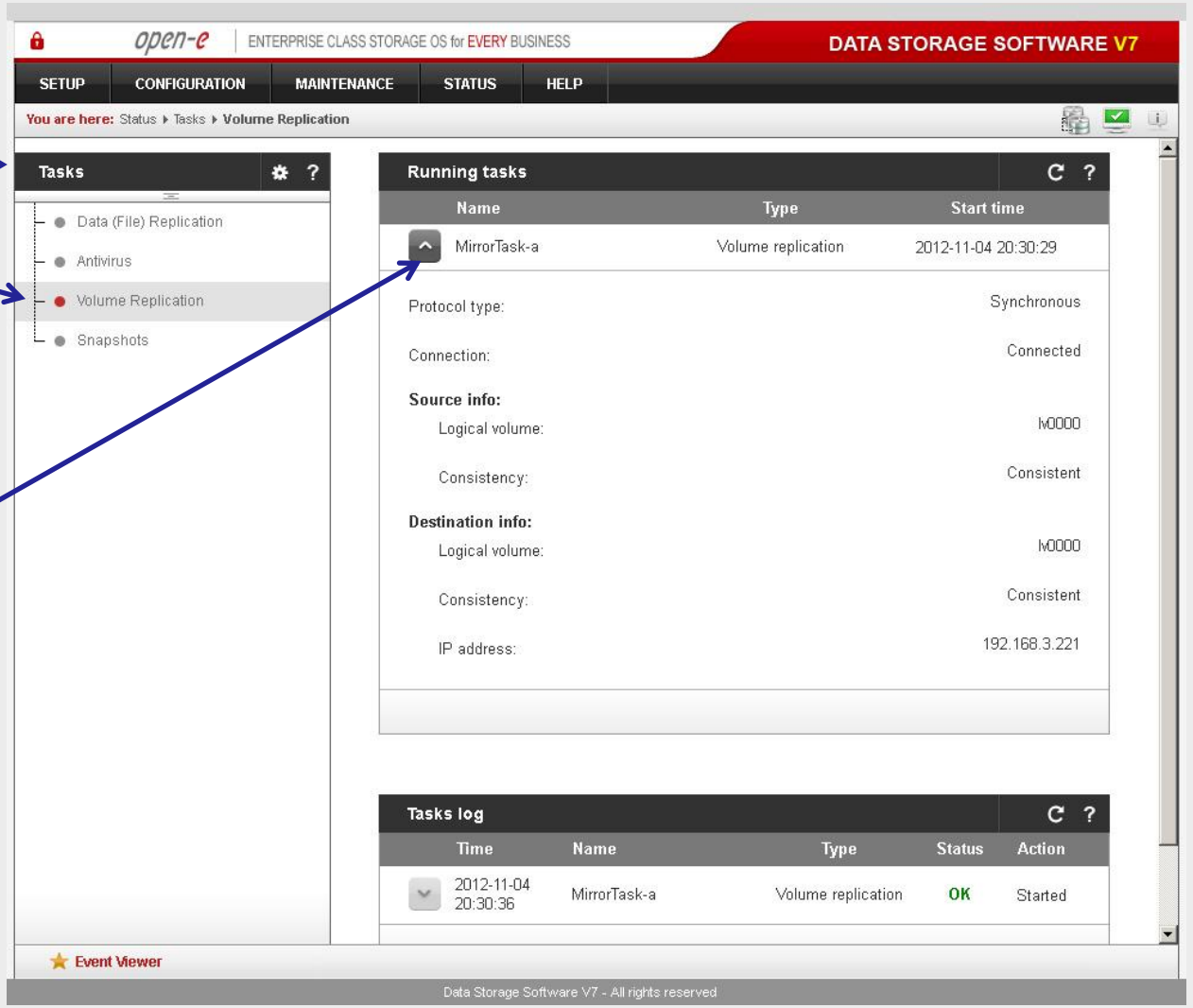
node-a

IP Address:192.168.0.220

3. Configure the node-a

You can check the status of Volume Replication anytime in **STATUS** -> **„Tasks"** -> **„Volume Replication"** menu.

Click on the button, located next to a task name (in this case **MirrorTask-a**) to display detailed information on the current replication task.



NOTE:

Please allow the replication task to complete (similar to above with status being „Consistent") before writing to the iSCSI Logical Volume.

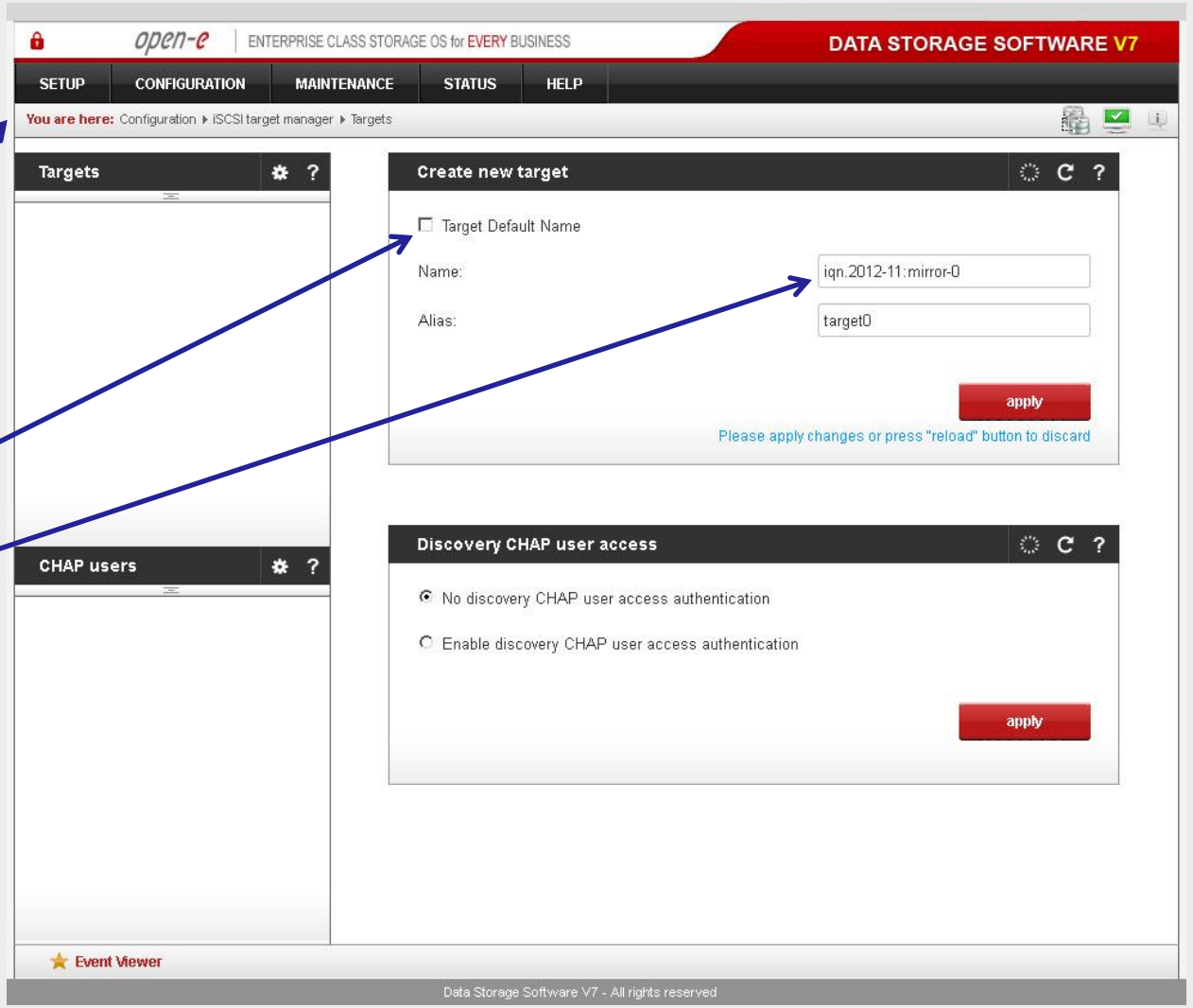
Open-E DSS V7 Active-Passive iSCSI Failover

Data Server (DSS2)
node-b
IP Address:192.168.0.221

4. Create new target on the node-b

Choose **CONFIGURATION, „iSCSI target manager"** and **„Targets"** from the top menu.

In the **„Create new target"** function, uncheck the box **Target Default Name**.
In the **Name** field, enter a name for the new target and click **apply** to confirm.



iSCSI targets

NOTE:
Both systems must have the same Target name.

Open-E DSS V7 Active-Passive iSCSI Failover

Data Server (DSS2)

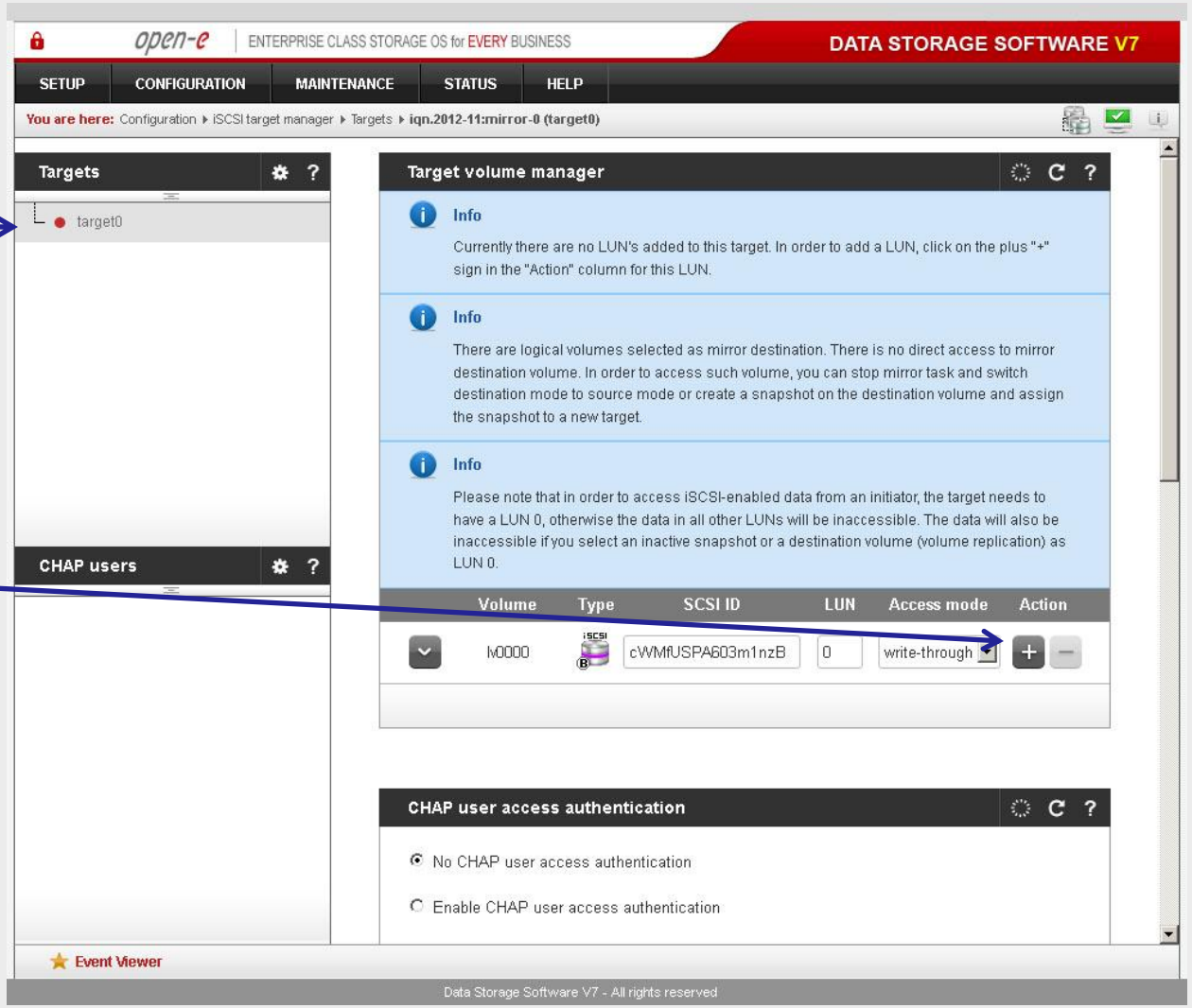
node-b

IP Address:192.168.0.221

4. Create new target on the node-b

After that, select **target0** within the **Targets** field.

To assign appropriate volume to the target (**iqn.2012-11:mirror-0** -> **lv0000**) and click the + button located under **Action.**



Open-E DSS V7 Active-Passive iSCSI Failover

Data Server (DSS1)

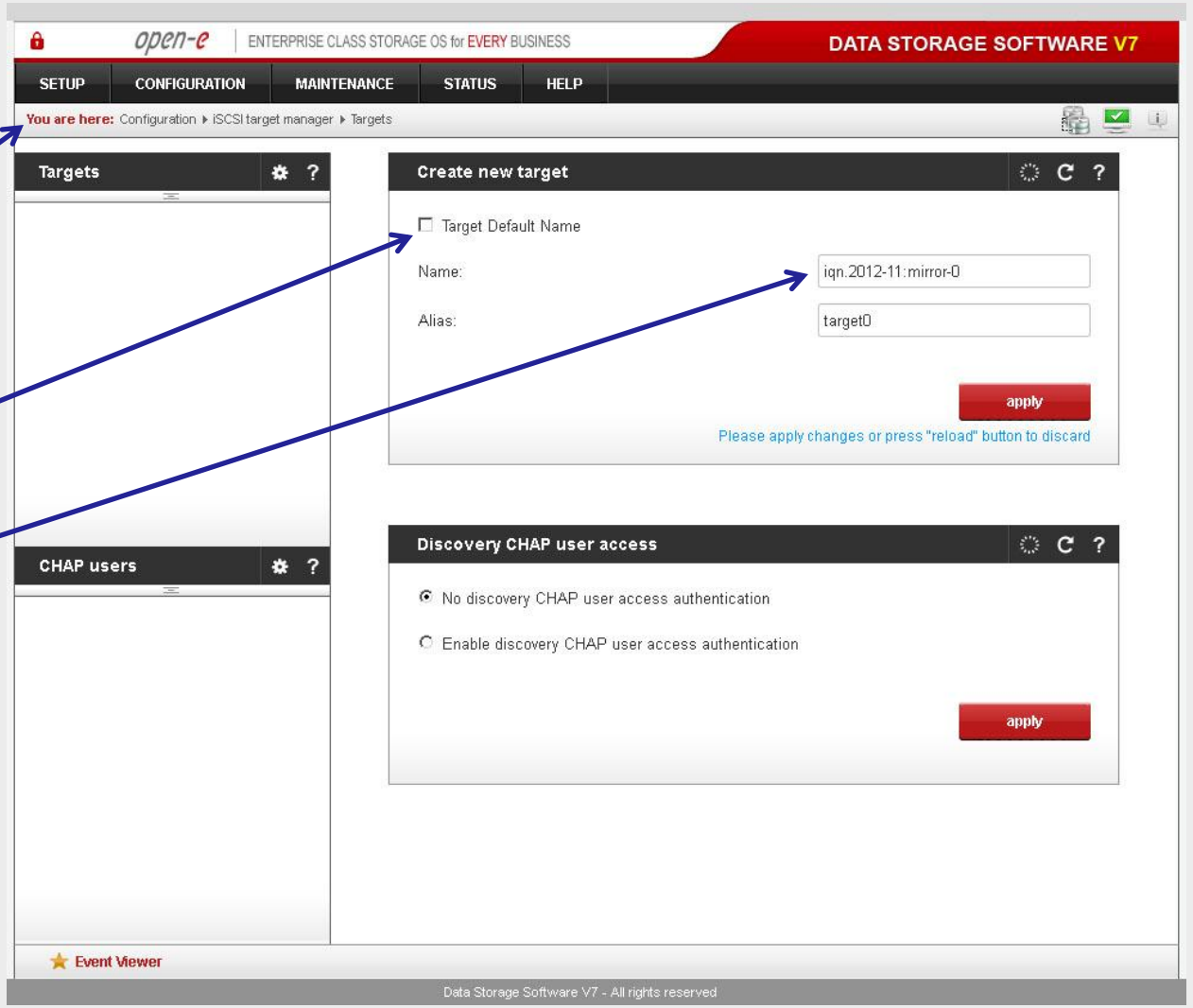
node-a

IP Address:192.168.0.220

5. Create new target on the node-a

Next, go to node-a, click on **CONFIGURATION** and choose **„iSCSI target manager"** →**„Targets"** from the menu.

Within the **„Create new target"** function, uncheck the box **Target Default Name.**
In the **Name** field, enter a name for the new target and click apply to confirm.



iSCSI targets

NOTE:
Both systems must have the same Target name.

Open-E DSS V7 Active-Passive iSCSI Failover

Data Server (DSS1)

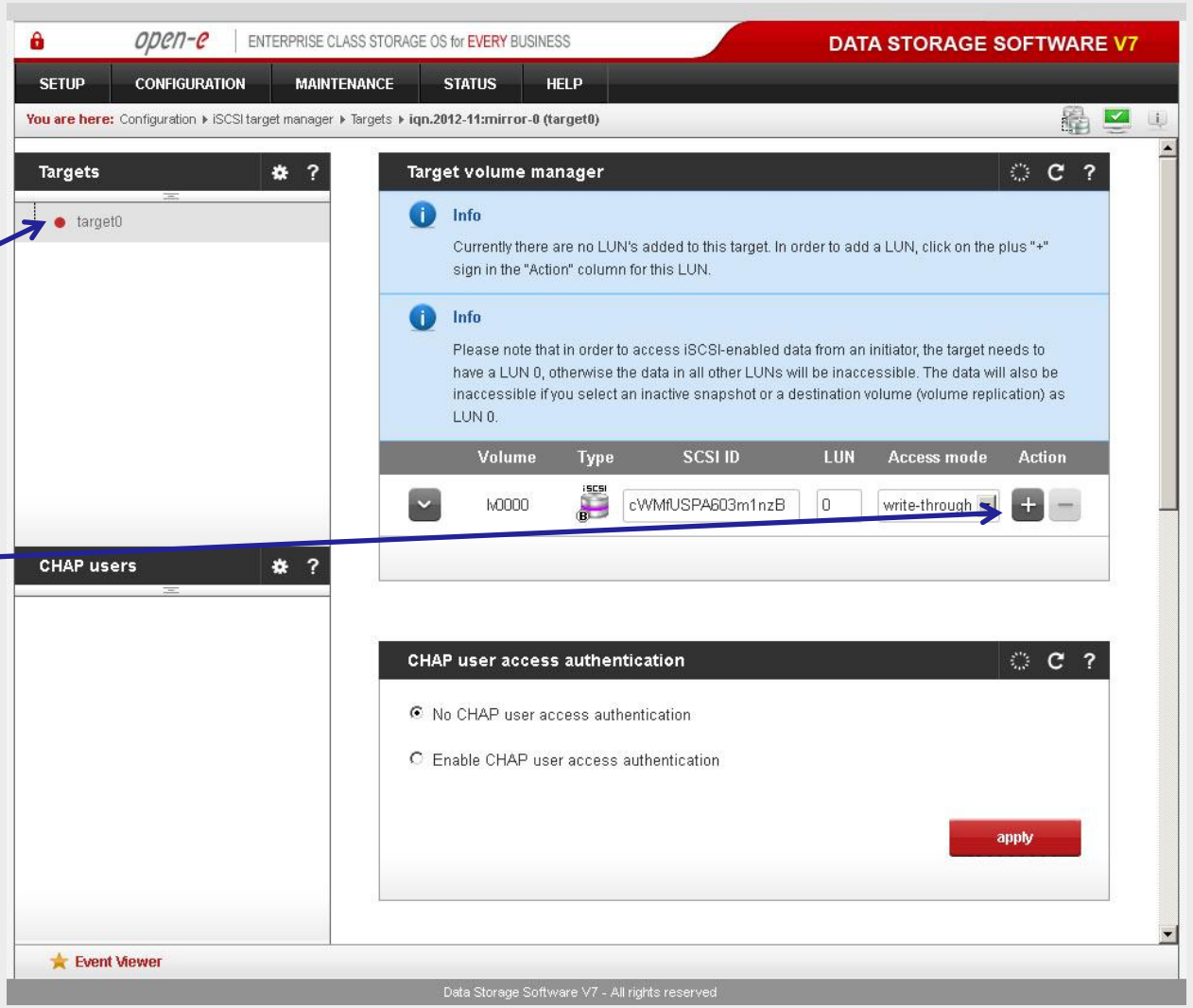
node-a

IP Address:192.168.0.220

5. Create new target on the node-a

After that, select **target0** within the **Targets** field.

To assign appropriate volume to the target (**iqn.2012-11:mirror-0 -> lv0000**) and click the + button located under **Action.**



NOTE:

Before clicking the + button again, please copy & paste the SCSI ID and LUN# from the node-b.

Open-E DSS V7 Active-Passive iSCSI Failover

Data Server (DSS1)

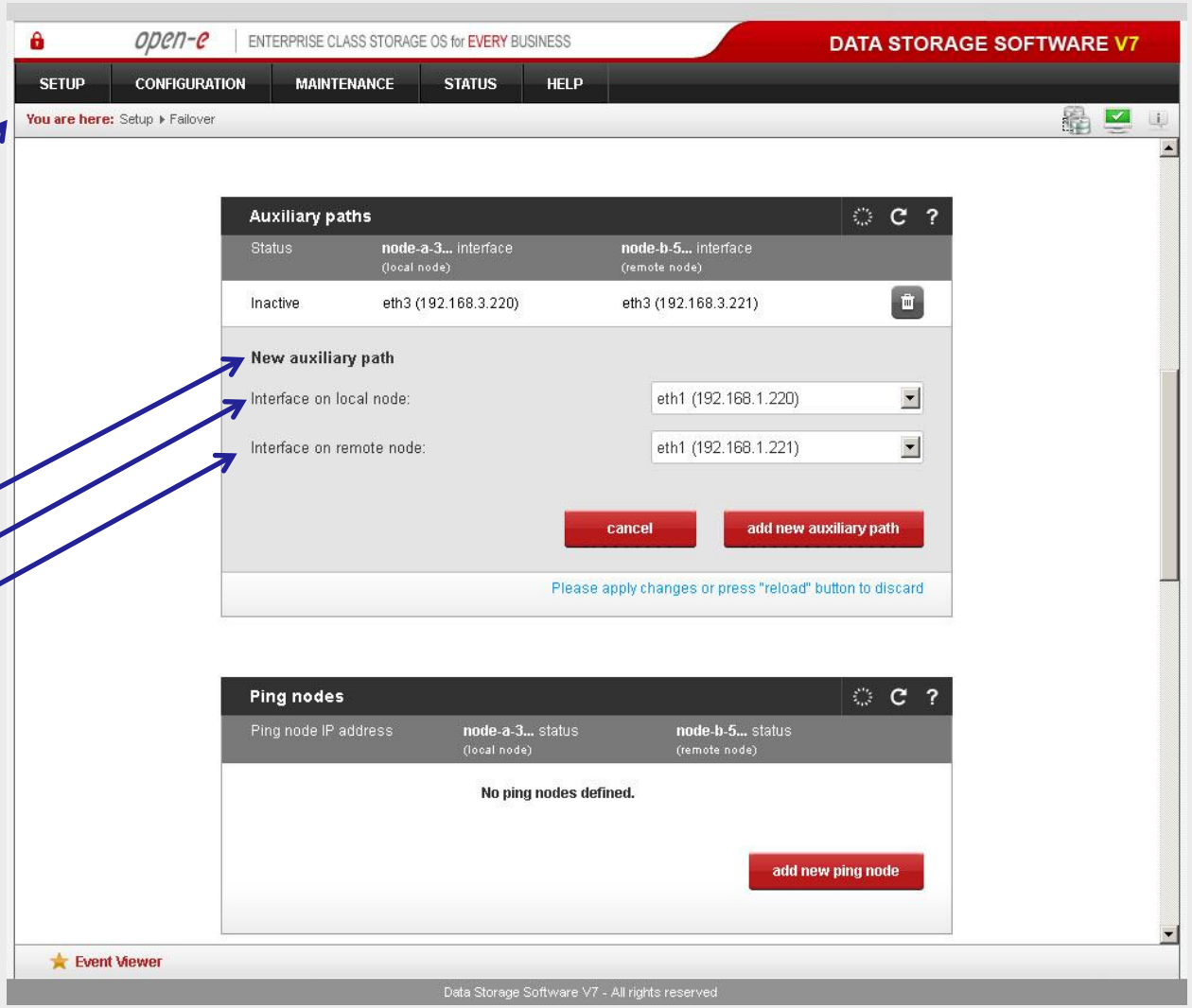
node-a

IP Address:192.168.0.220

6. Configure Failover

On the node-a go to **Setup** and select „**Failover**"

In the „**Auxiliary paths**" function, select the 1st **New auxiliary path** on the local and remote node and click the **add new auxiliary path** button.



Open-E DSS V7 Active-Passive iSCSI Failover

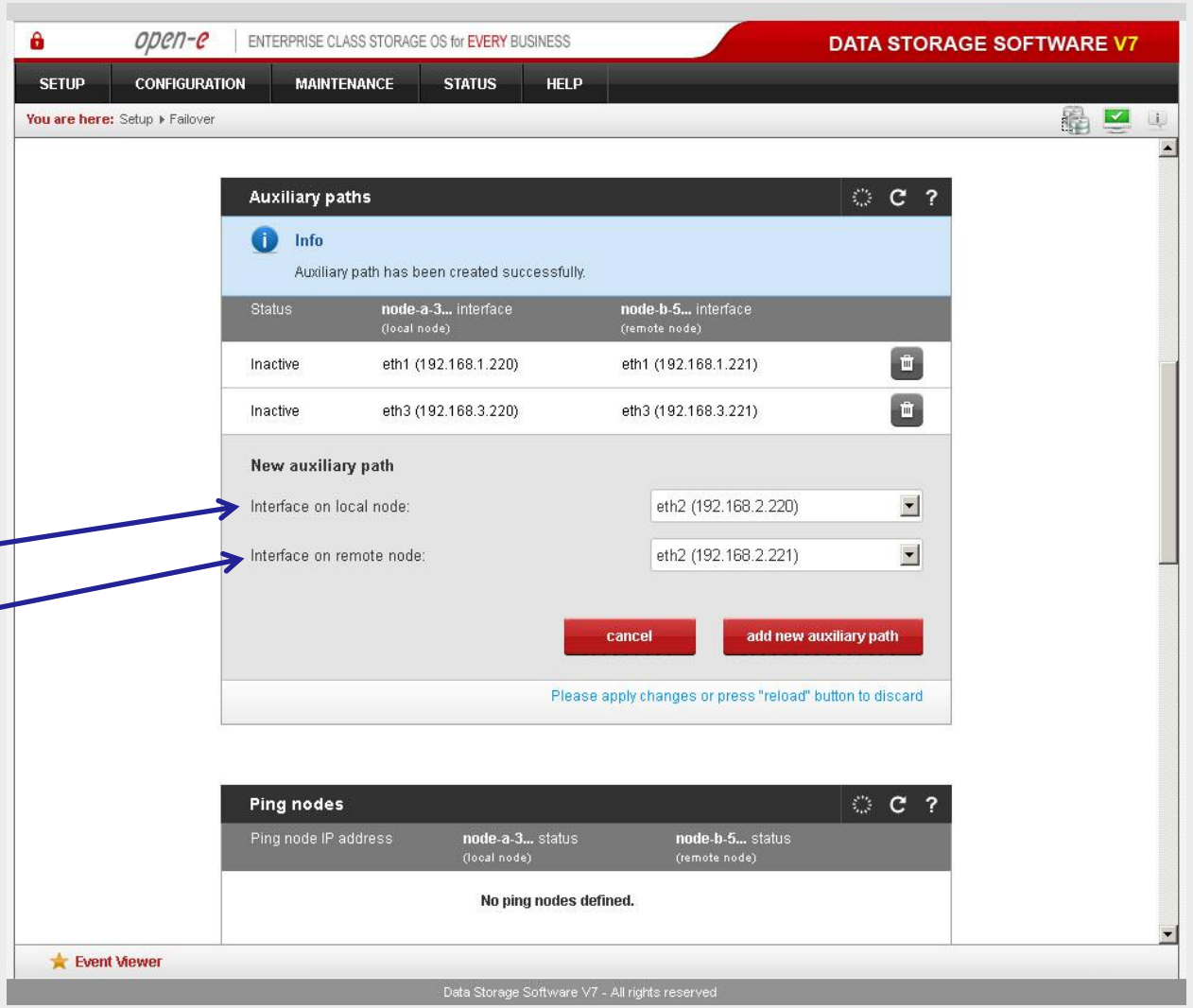
Data Server (DSS1)

node-a

IP Address:192.168.0.220

6. Configure Failover

In the **Auxiliary paths** function, select the 2nd **New auxiliary path** on the local and remote node and click the add new auxiliary path button.



Open-E DSS V7 Active-Passive iSCSI Failover

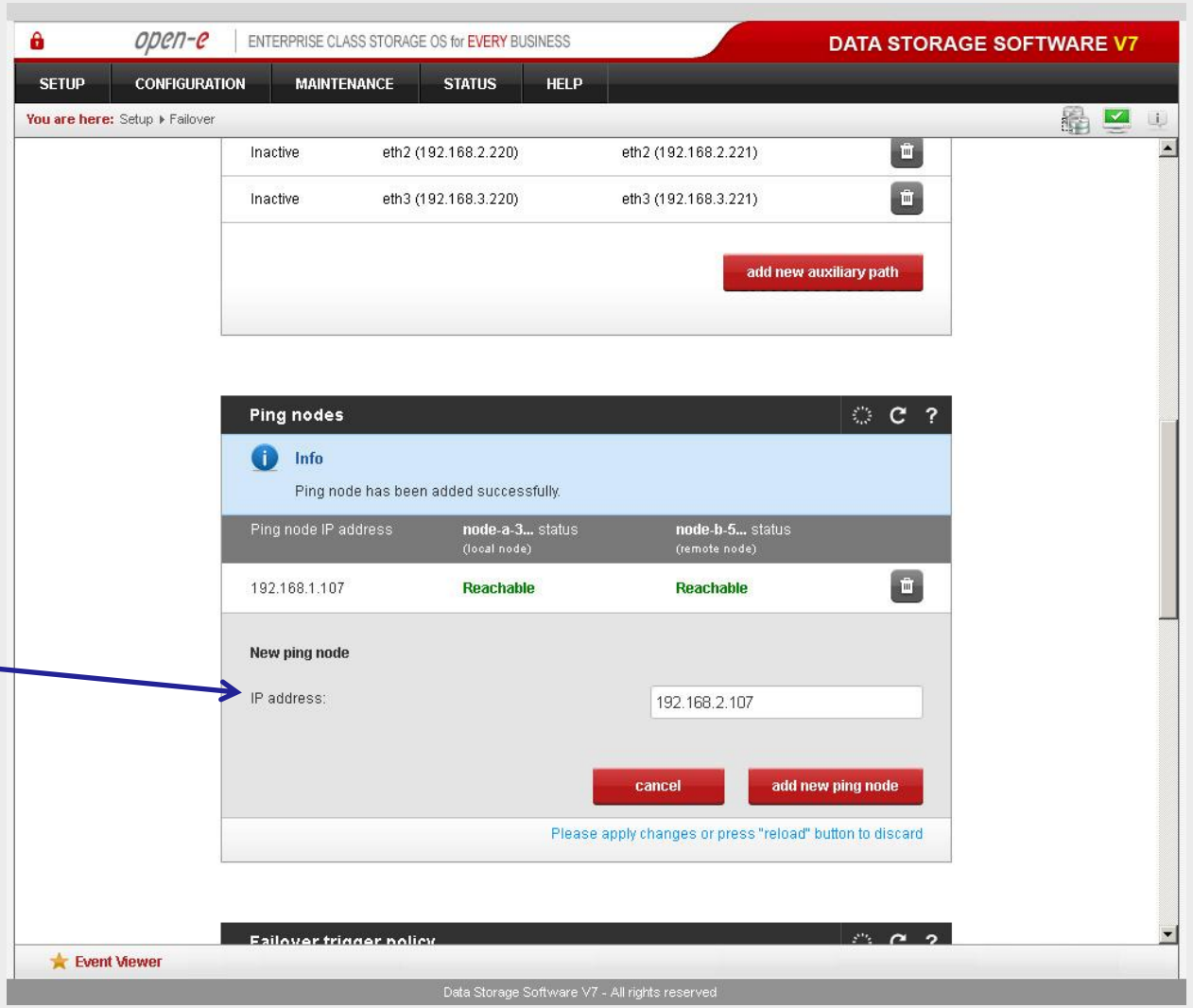
Data Server (DSS1)

node-a

IP Address:192.168.0.220

6. Configure Failover

In the **„Ping nodes”** function, enter two ping nodes.
In the **IP address** field enter IP address and click the **add new ping node** button (according to the configuration in the third slide).
In this example, IP address of the first ping node is: 192.168.1.107 and the second ping node: 192.168.2.107



Open-E DSS V7 Active-Passive iSCSI Failover

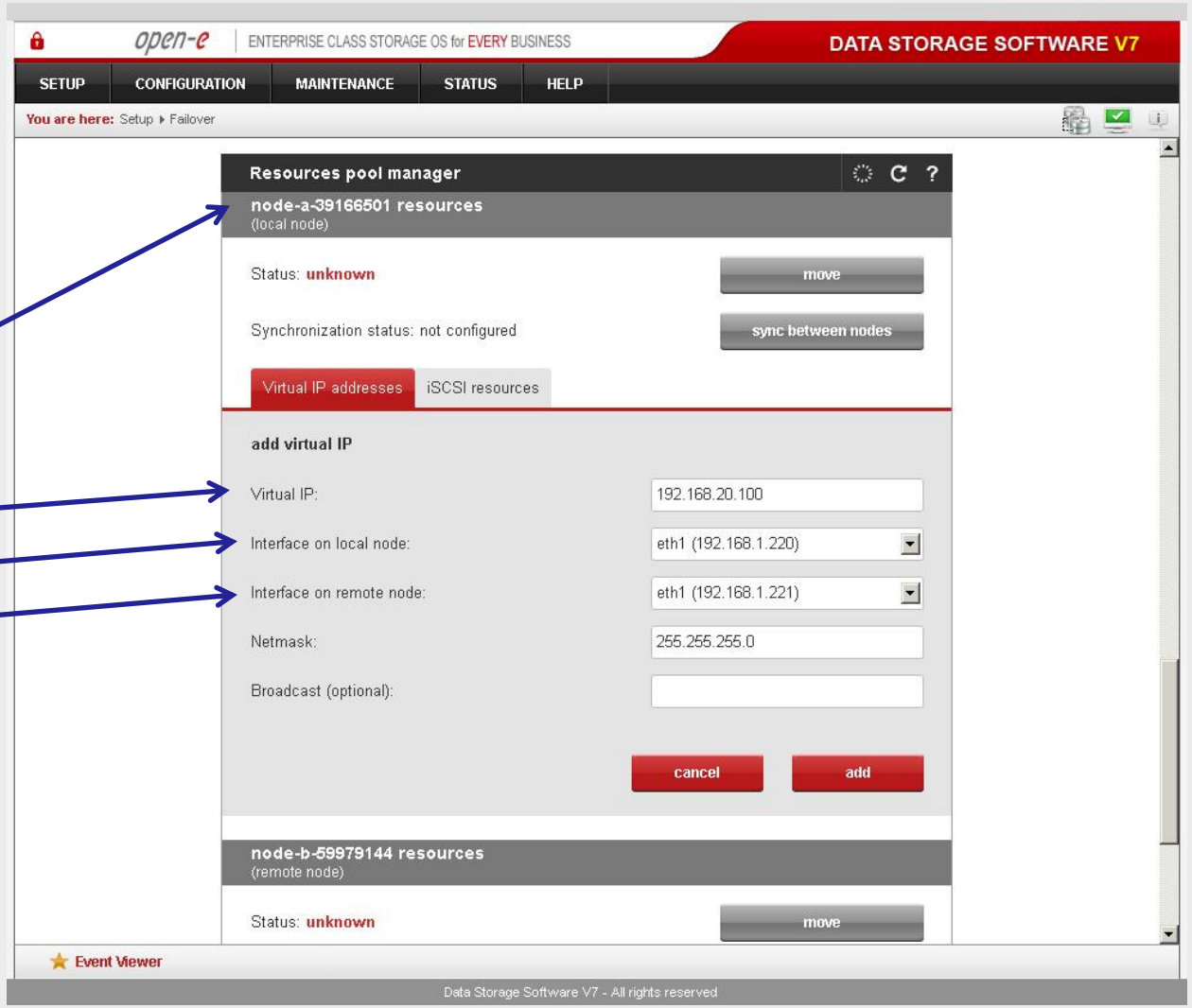
Data Server (DSS1)

node-a

IP Address:192.168.0.220

6. Configure Failover

Next, go to the **Resources Pool Manager** function (on node-a resources) and click the **add virtual IP** button. After that, enter 1st **Virtual IP,** (in this example 192.168.20.100 according to the configuration in the third slide) and select two appropriate interfaces on local and remote nodes. Then, click the **add** button.



Open-E DSS V7 Active-Passive iSCSI Failover

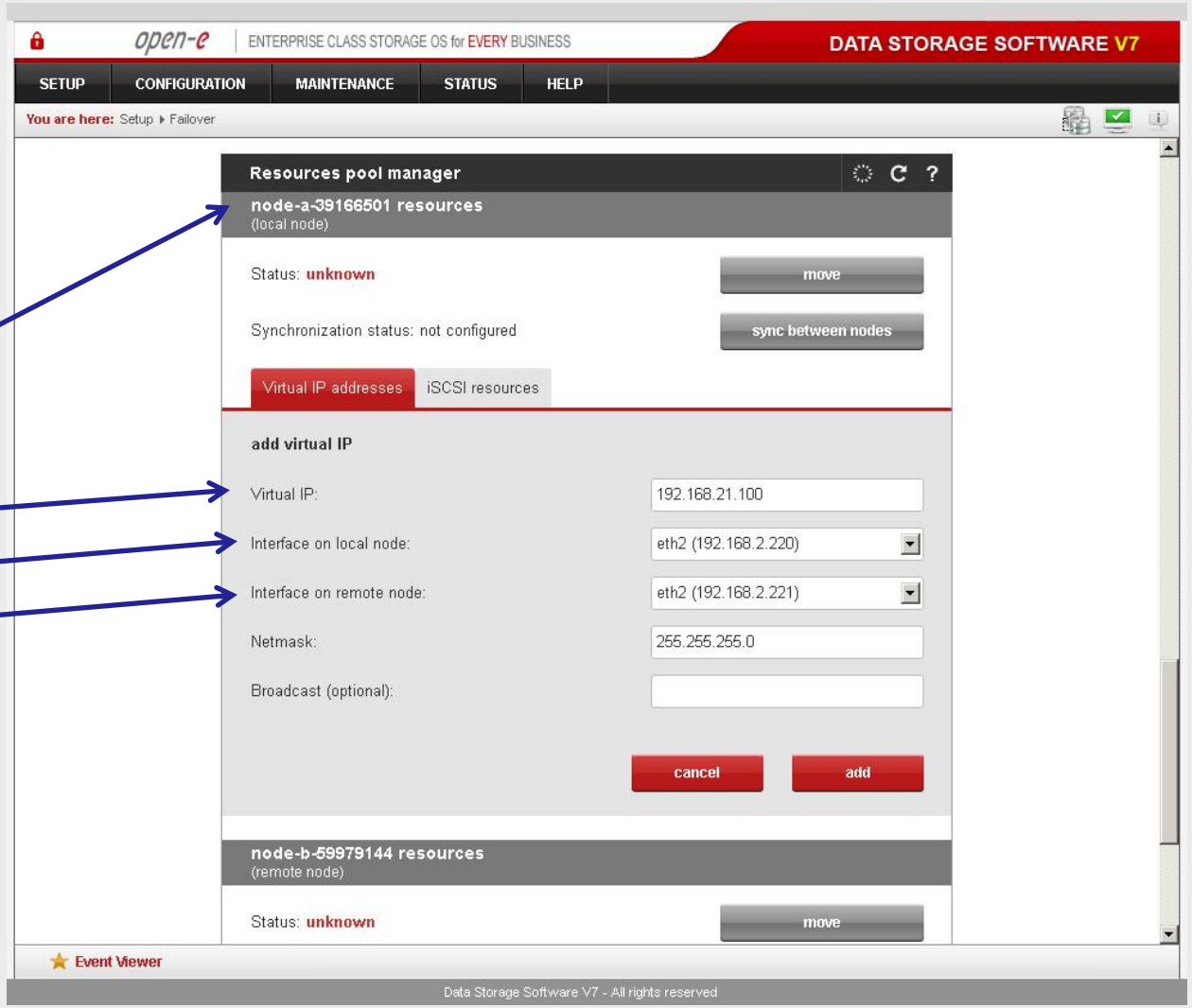
Data Server (DSS1)

node-a

IP Address:192.168.0.220

6. Configure Failover

Now, still on node-a resources (local node) enter the next Virtual IP address. Click **add virtual IP** enter 2nd **Virtual IP,** (in this example 192.168.21.100), and select two appropriate interfaces on the local and remote nodes. Then, click the **add** button.



Open-E DSS V7 Active-Passive iSCSI Failover

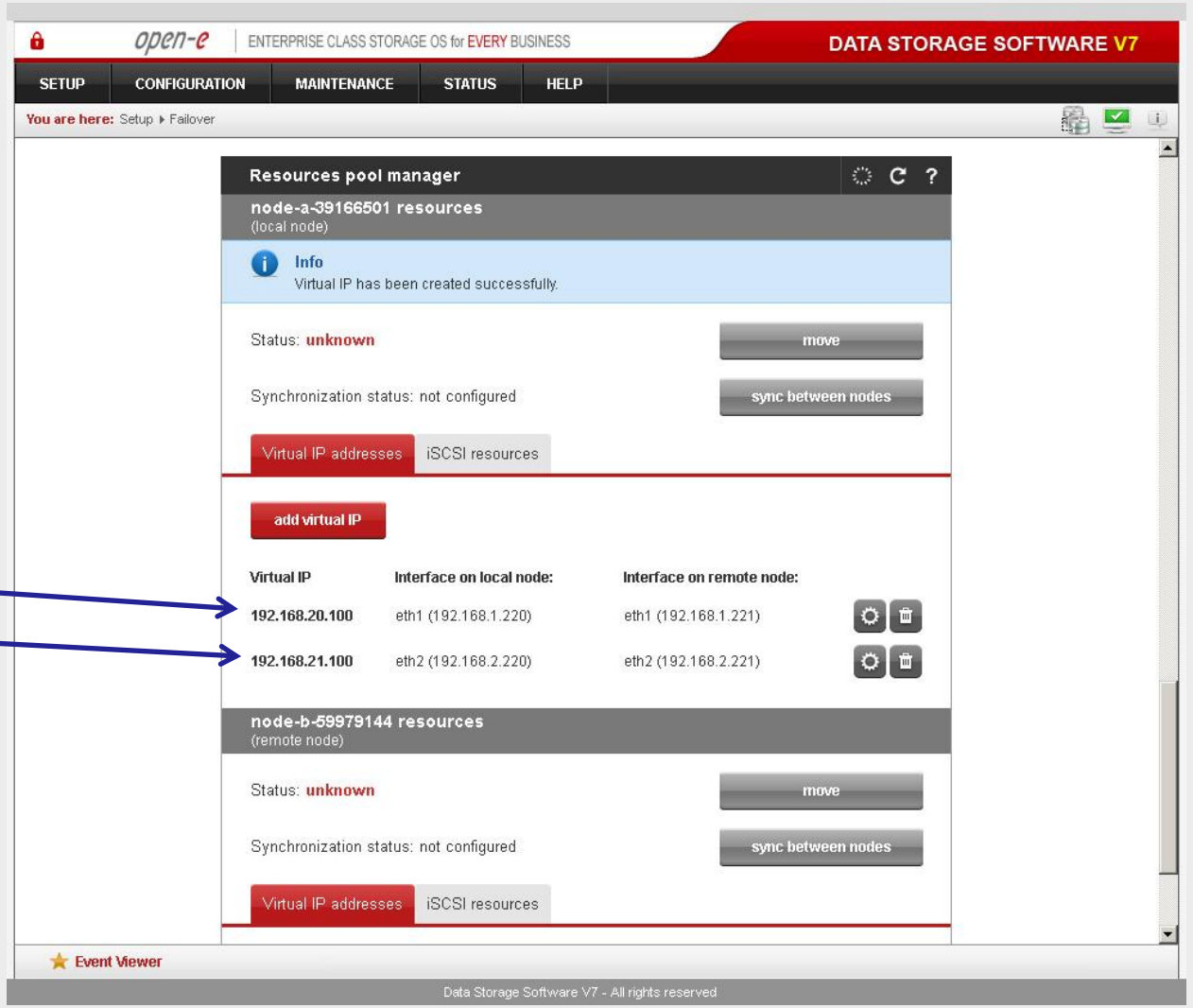
Data Server (DSS1)

node-a

IP Address:192.168.0.220

6. Configure Failover

Now you have 2 **Virtual IP** addresses configured on two interfaces.



Open-E DSS V7 Active-Passive iSCSI Failover

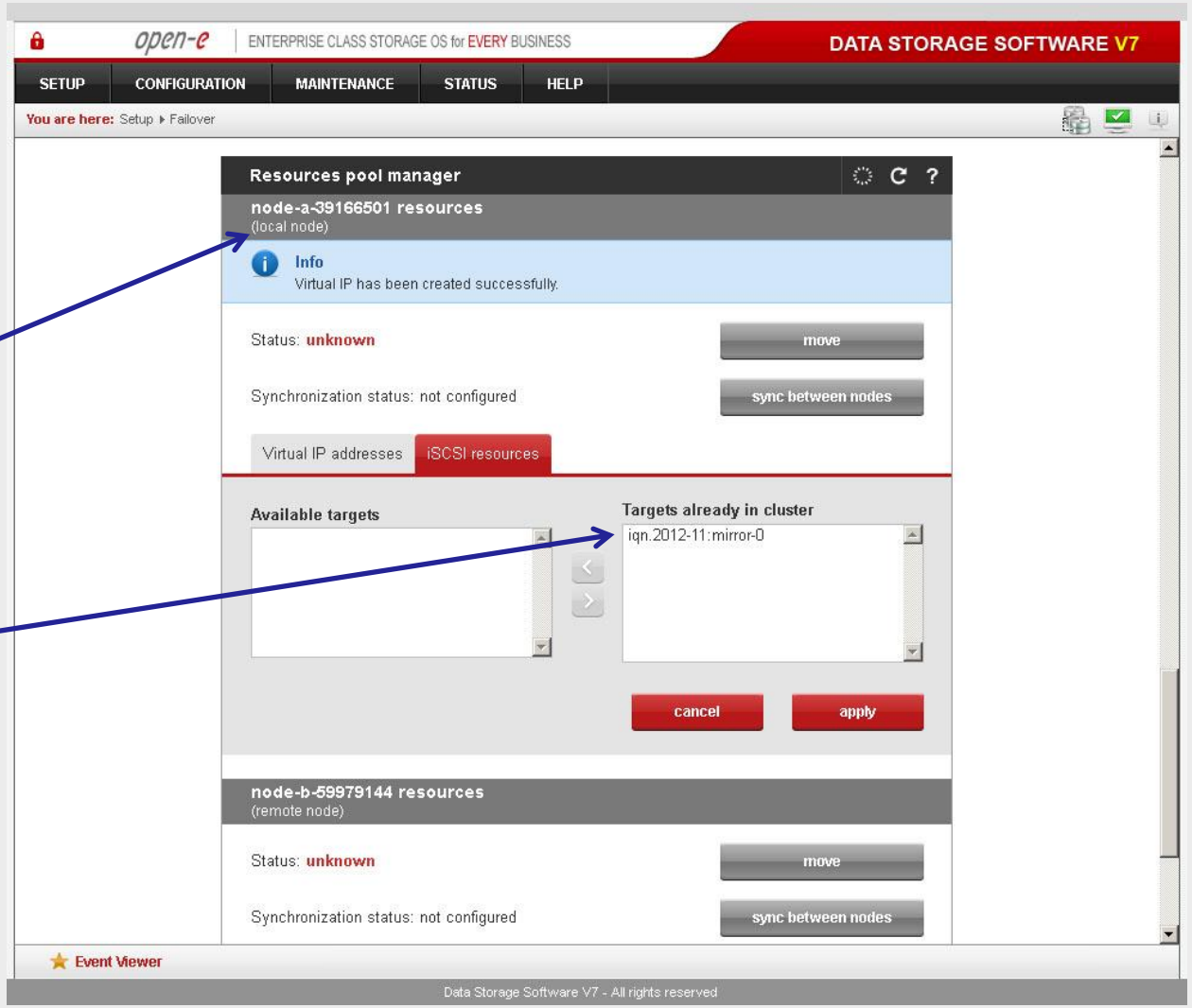
Data Server (DSS1)

node-a

IP Address:192.168.0.220

6. Configure Failover

When you are finished with setting the virtual IP, go to the „**iSCSI resources**" tab on the **local node** resources and click the add or remove targets button.
After moving the target **mirror-0** from „**Available targets**" to „**Targets already in cluster**" click the apply button.



Open-E DSS V7 Active-Passive iSCSI Failover

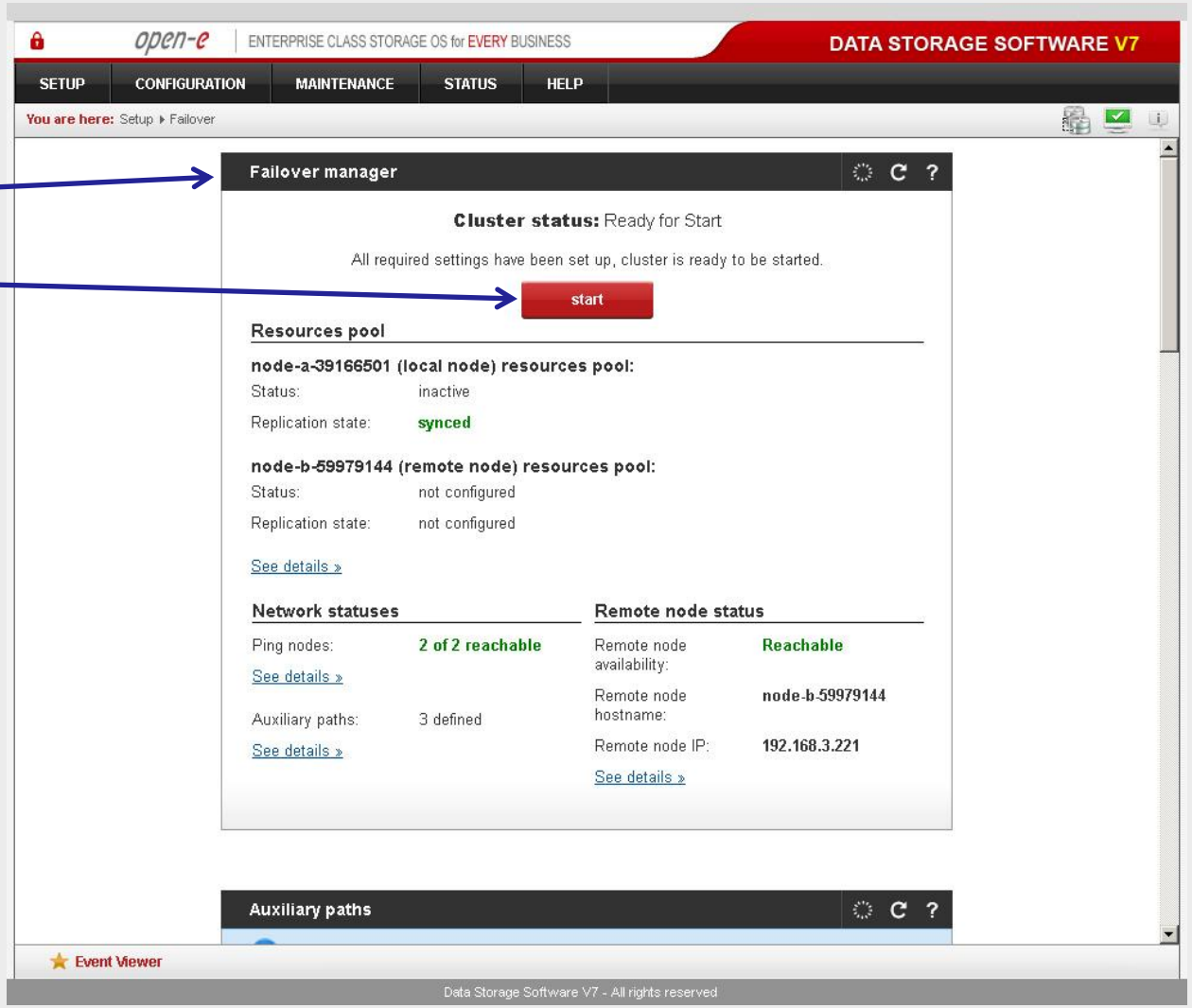
Data Server (DSS1)

node-a

IP Address:192.168.0.220

6. Configure Failover

After that, scroll to the top of the **Failover manager** function.
At this point, both nodes are ready to start the Failover.
In order to run the Failover service, click the start button and confirm this action by clicking the start button again.



NOTE:
If the start button is grayed out, the setup has not been completed.

Open-E DSS V7 Active-Passive iSCSI Failover

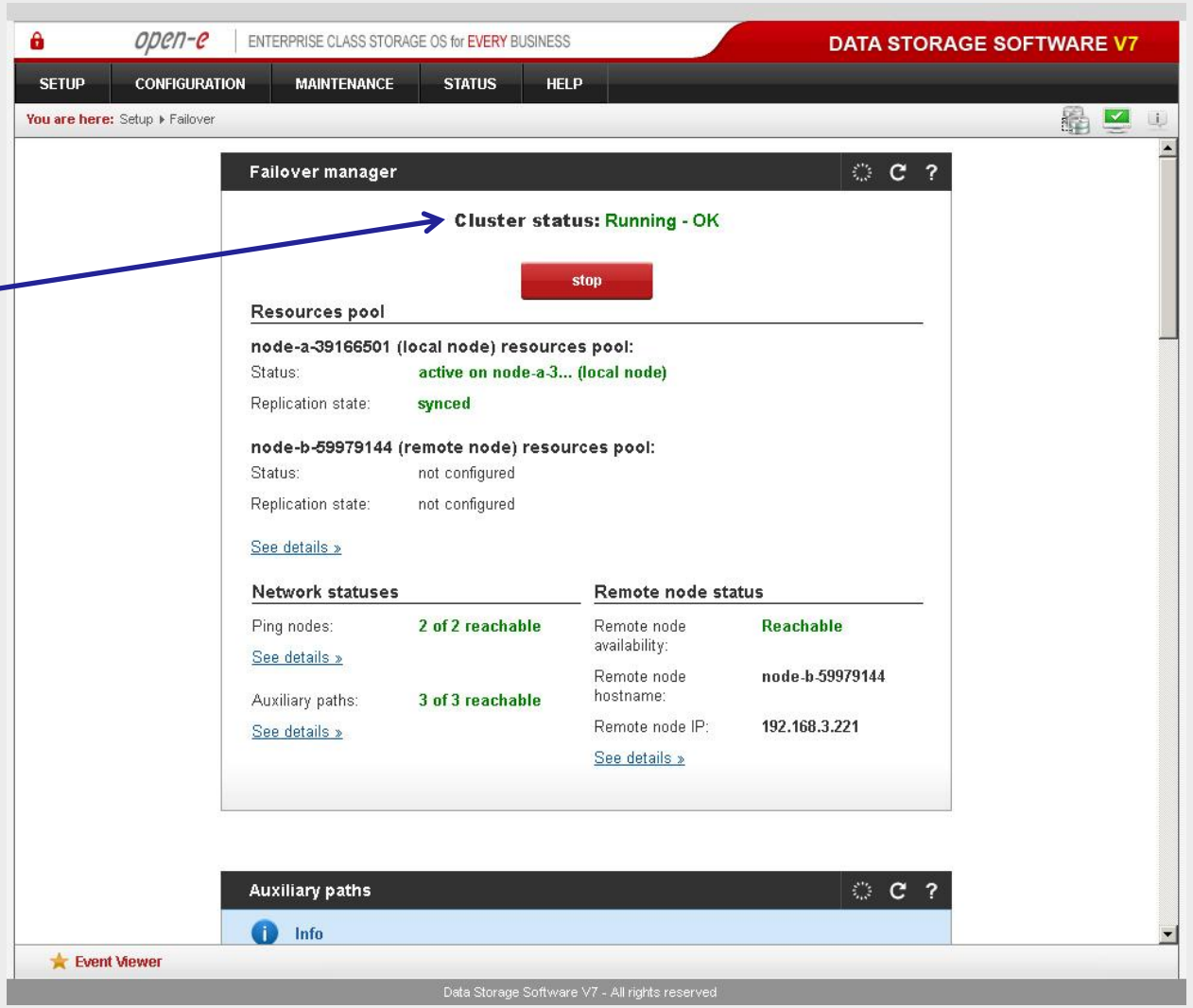
Data Server (DSS1)

node-a

IP Address:192.168.0.220

7. Start Failover Service

After clicking the start button, configuration of both nodes is complete.



NOTE:

You can now connect with iSCSI Initiators. The storage client, in order to connect to target0 please setup multipath with following IP on the initiator side: 192.168.20.100 and 192.168.21.100.

Open-E DSS V7 Active-Passive iSCSI Failover

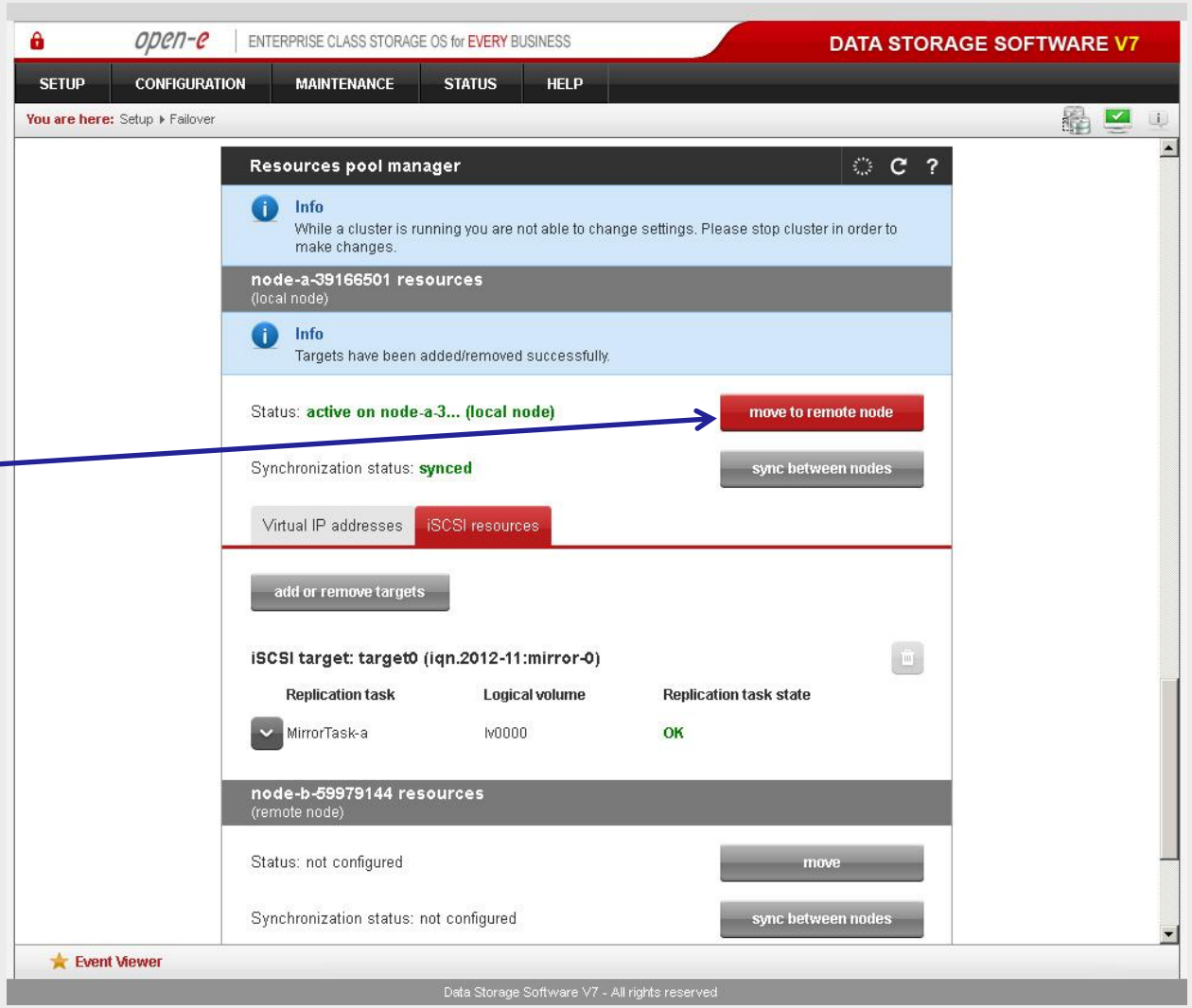
Data Server (DSS1)

node-a

IP Address:192.168.0.220

8. Test Failover Function

In order to test Failover, go to the **Resources pool manager** function. Then, in the **local node** resources, click on the **move to remote node** button and confirm this action by clicking the **move** button.



Open-E DSS V7 Active-Passive iSCSI Failover

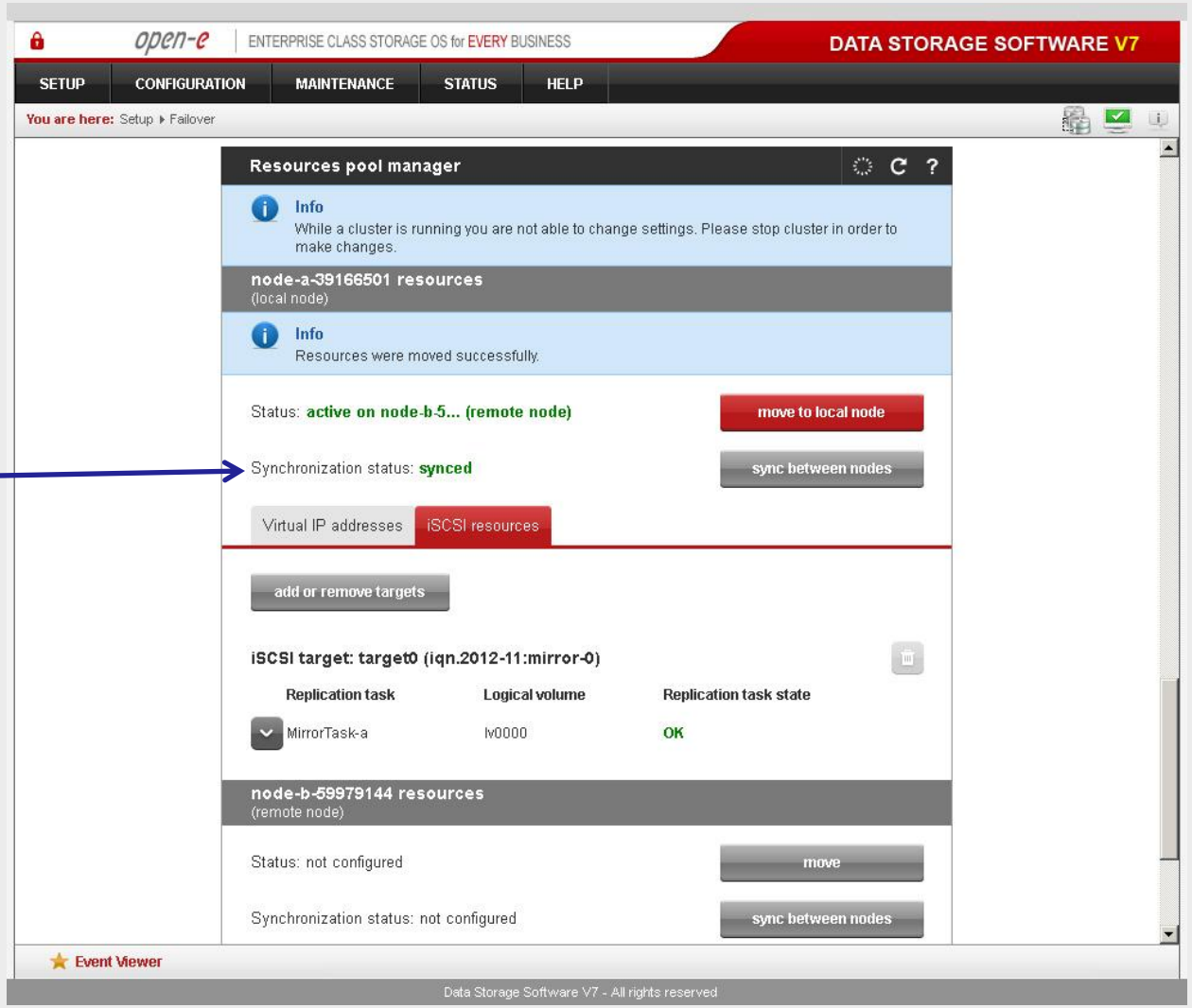
Data Server (DSS1)

node-a

IP Address:192.168.0.220

8. Test Failover Function

After performing this step, the status for **local node** resources should state „active on node-b (**remote node**)" and the **Synchronization status** should state „**synced**".



Open-E DSS V7 Active-Passive iSCSI Failover

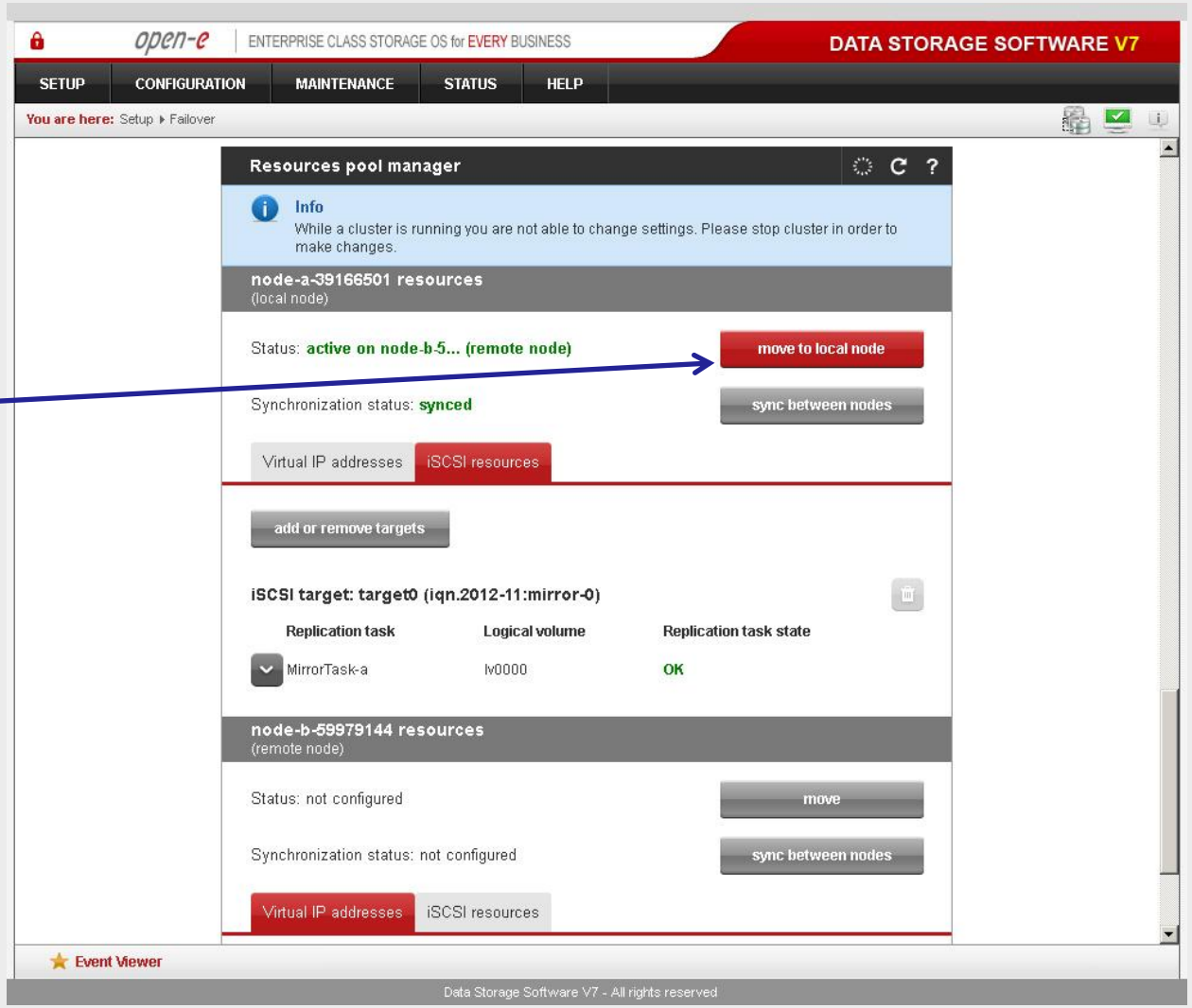
Data Server (DSS1)

node-a

IP Address:192.168.0.220

9. Run Failback Function

In order to test failback, click the **move to local node** button in the **Resources pool manager** box for local node resources and confirm this action by clicking the **move** button.



Open-E DSS V7 Active-Passive iSCSI Failover

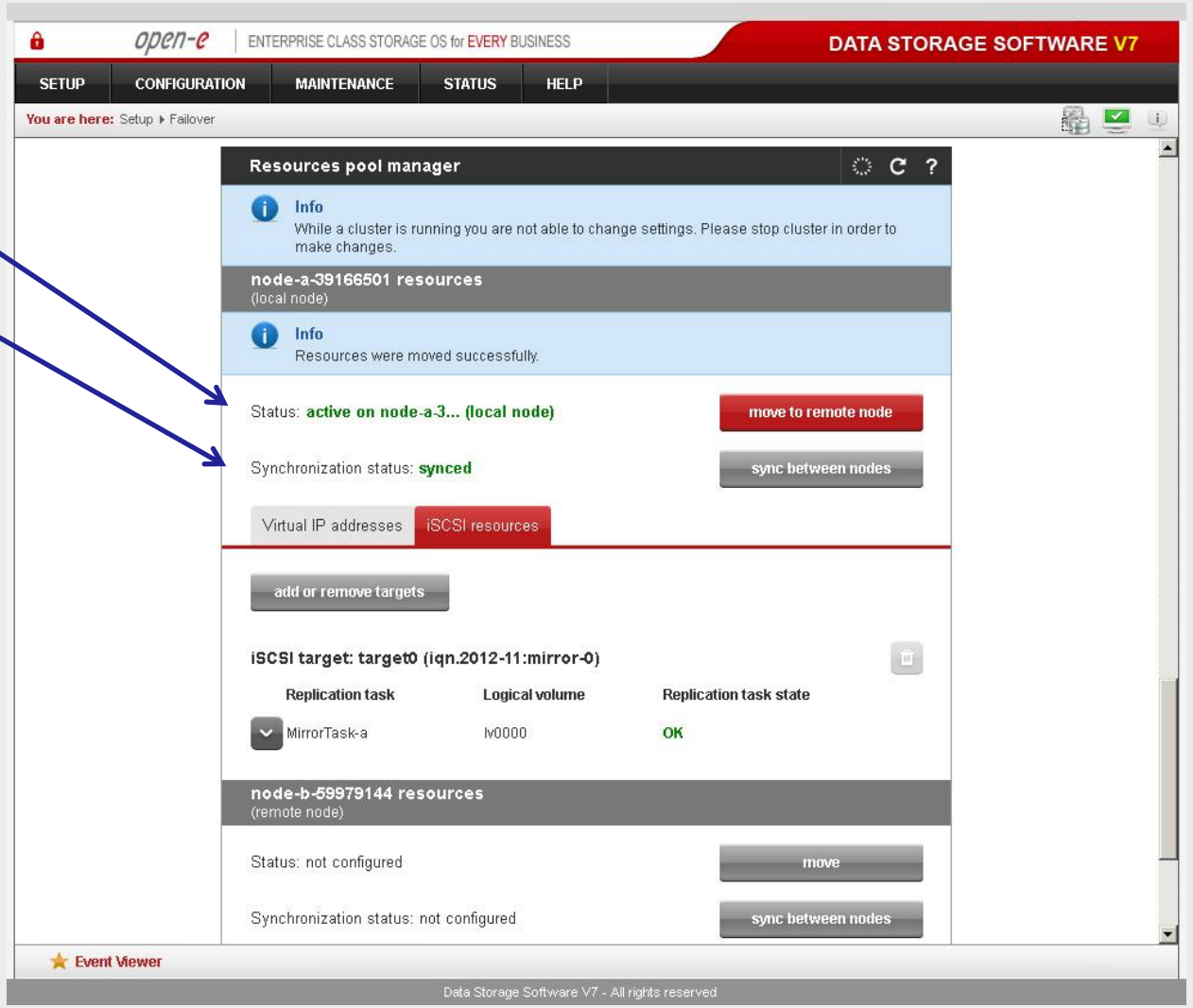
Data Server (DSS1)

node-a

IP Address:192.168.0.220

9. Run Failback Function

After completing this step the status for node-a resources should state „active on node-a" (**local node**) and the **Synchronization status** should state: **synced**.



NOTE:

The Active-Passive option allows configuring a resource pool only on one of the nodes. In such a case, all volumes are active on a single node only. The Active-Active option allows configuring resource pools on both nodes and makes it possible to run some active volumes on node-a and other active volumes on node-b. The Active-Active option is enabled with the TRIAL mode for 60 days or when purchasing the Active-Active Failover Feature Pack.

The configuration and testing of Active-Passive iSCSI Failover is now complete.

Thank you!

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